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TWO DISCOURSES
ON THE HISTORY AND IMPROVEMENT OF THE
MATERIA MEDICA,
ORIGINALLY DELIVERED AS
INTRODUCTORY LECTURES.

Author's name
BY
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PROFESSOR OF THE INSTITUTES AND PRACTICE OF PHYSIC AND CLINICAL
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“To communicate what I have tried, and leave the rest to others for
farther inquiry, is all my design in publishing these papers.”

NEWTON.

VOL. II.

THIRD EDITION, ENLARGED AND REVISED.

PHILADELPHIA:
H. C. CAREY AND I. LEA, CHESNUT STREET.
1824.

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“Elements of Therapeutics and Materia Medica. To which are prefixed two Discourses on the history and improvement of the Materia Medica, originally delivered as introductory lectures. By N. Chapman, M. D. professor of the institutes and practice of Physic and clinical practice in the University of Pennsylvania ; president of the Academy of Medicine of Philadelphia, &c. &c. “To communicate what I have tried, and leave the rest to others for farther inquiry, is all my design in publishing these papers.” *Newton*. Third edition, enlarged and revised.

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D. CALDWELL,
Clerk of the Eastern District of Pennsylvania.

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SECTION I.

Of Expectorants.

EXPECTORANTS may be defined those medicines which promote or repress the bronchial discharge, and facilitate the process of its ejection.

Considering the great importance of the lungs, and their appendages, to the well being of the animal economy, it is obvious that a description of articles calculated to relieve any of the morbid derangements of these organs, must have no slender claims to our attention.

Much difficulty is confessed, by those who have attempted an explanation of the *modus operandi* of this class of articles. Cullen conjectures, that they may increase the effusion from the arteries of the lungs, which, being a thin fluid, dilutes the mucus of the pulmonary follicles, and, by rendering it less viscid and tenacious, makes its expulsion more easy.

Whether any of the expectorants act in this way has been doubted. But, since a pulmonary exhalation constantly goes on, it seems not improbable, that we may have medicines which increase this discharge, precisely as diaphoretics promote perspiration. It is, however, not less true, that all the means employed as expectorants do not thus produce their effects. Endowed with dissimilar properties, it is reasonable to presume, that the different articles may variously operate. To this conclusion, we can hardly help being conducted, when we reflect, how opposite are the states of the lungs in which we prescribe expectorant mixtures, and what essentially different substances are employed for this purpose.

Expectoration may be repressed, or imperfectly performed, by constriction of the lungs, and by the removal of which, by antispasmodics, an infinite degree of relief is afforded. But it as often happens, that the secretion is checked or suspended by a highly inflamed state of the mucous tissue of the bronchial structure productive of equal distress, and which is most effectually overcome by direct depletion, and counter irritation, and general determination to the surface. It is also apparent, that the lungs occasionally, from debility, pour out an excessive discharge of mucus, or thinner fluids—and that by stimulation of the exhalents, by the balsamic and terebinthines in the former, and the pure incitants in the latter instance, the effusion is abated, and oppression removed, on the same principle as sweating is check-

ed, by active diaphoretics, in hectic fever, &c. Caused by tubercles, or any permanent state of irritation, this, with the consequent discharge, is best allayed, or diminished, by opiates, and the ordinary cough mixtures.

When it proceeds, which it sometimes does, from an increased or morbid sensibility of the larynx or fauces, in which the lungs participate, attended by a tickling, provocative of cough, it, with its remoter effects, may be palliated or cured by demulcents or mucilages.

It follows, from the preceding observations, that expectorants are to be considered in several points of view. But in all cases, and in whatever manner these medicines are productive of advantage, it is when introduced into the stomach, by an impression first made on that organ, and extended to the lungs, through the medium of the sympathy which so intimately and conspicuously connects these parts. Nothing is more absurd, or less capable of being reconciled with fact, than the hypothesis to be met with, even in the most recent of the writers on the materia medica, that expectorants operate by reaching the lungs through the circulation !

Three rules only shall I suggest for the administration of these remedies :

1. As in the use of diaphoretics, let the patient be kept warm. There is a very close consent between the skin and pulmonary organs, and we shall generally

perceive that moderate warmth, and even moisture, on the surface, greatly facilitates expectoration.

2. Carefully avoid purging. As remarked on a former occasion, none of the complaints of the lungs will bear this evacuation to any extent. Besides which, the action of the secretory vessels of the lungs and intestines, would seem to be alternate and opposed. Expectoration, at least, is very apt to be suppressed or diminished by diarrhoea or by the use of purges.

3. In the selection of the article, be guided, as far as may be, by the nature of the case in which it is to be employed.

SECTION II.

Of particular Expectorants.

It is not easy, so various are the properties of these articles, to arrange them, without a minuteness of classification hardly admissible. To distribute them according to their affinities, to the different parts of the pulmonary apparatus, and particular adaptation to the various cases, would be most practically useful. But, in the present state of our knowledge, especially as regards the first point, I apprehend the plan could not be very readily effected. Perhaps our purposes may be attained by treating of them, as I have done as to the other medicines, under the general division of the mild and the active.

By some writers, the mucilaginous beverages have been placed among the more lenient expectorants, such as flax-seed tea, or barley, or rice water. But though these are useful in some of the pectoral affections, by doing away irritation about the fauces, and thereby palliating cough, they can scarcely be consi-

dered as expectorants, and may, with more propriety, be still designated by the title of demulcents.

Of the milder expectorants, some of the emetic substances are deservedly appreciated. But of these I have already said so much under preceeding heads,* that little remains for me to add. It is known, that emetic tartar and ipecacuanha, particularly, are prescribed with this view, sometimes alone, though oftener in various states of combination. They are serviceable, in small doses, by inducing relaxation, and determining to the surface,—and, exciting vomiting, they emulge the bronchiæ, and expel their accumulated contents.

LICHEN ISLANDICUS.

This plant grows abundantly in the northern parts of Europe, and in the United States. The leaves are mucilaginous, and in a recent state so bitter as to be given as an anthelmintic. By the process of drying, they lose much of this quality, and afford a species of farinaceous matter, of which the Icelanders make bread. Liverwort, or Iceland moss, as it is usually called, has been long used in dysentery, and other bowel complaints, by the German physicians. It is at present more celebrated in catarrhal and consumptive cases, and not a little evidence might be collected

* Emetics and Diaphoretics.

of its efficacy. Allowing that it is mildly nutritious, and that, like mucilages generally, it allays coughing, I suspect nearly as much is conceded as can be done consistently with a just estimate of its powers. Yet, perhaps, something more may be claimed for it on the score of its tonic properties. The common mode of preparation is by boiling an ounce and a half of the leaves, previously macerated, in a quart of water over a slow fire, till a jelly is formed. If milk be preferred on any account, it may be substituted. The quantity to be used is a pint or more daily.

SESAMUM ORIENTALE.

This plant, better known by the title of *Benne*, is met with in most warm climates. Originally native of Africa, it has been introduced into our southern states probably by the imported negroes, and is cultivated pretty extensively. The seeds mixed with other matters are used by them for food, and were also by the ancient Egyptians. By expression the seeds yield a larger portion of oil than perhaps any other vegetable, as bland as that of the olive, and may in most respects be substituted for it, as well in domestic economy, as for medicinal purposes. The leaves, by simple infusion, afford an excellent mucilage, agreeably esculent, which is employed by the negroes of the south in the preparation of soups. It is found likewise to be a good demulcent, now much resorted to in diar.

rhœa, dysentery, in the nephritic and catarrhal affections.

GLYCYRRHIZA GLABRA.

This is a perennial plant, native of the south of Europe, which may be naturalized in almost every climate. The root only is medicinal. To the taste it is sweet, mixed with some degree of bitterness, and affords the only instance of a saccharine substance not occasioning thirst. On this account it received the title of *Adipson*.

Liquorice was once much employed in the several relations of detergent, attenuant, diuretic, demulcent, and expectorant. But, at present, its use is chiefly restricted to the alleviation of coughs, and a watery solution of the extract, alone, or in union with other articles, is preferred. This mixture is adapted to the advanced stages of the acute pneumonic affections, as well as to consumption.* I know not, indeed, any article, possessing in a higher degree the quality of calming pulmonary irritation than liquorice. Either the solution of which I have spoken, or an infusion of the root, answers well as a vehicle for the administration of many medicines, and especially of

* ℞ Extract. Glycyrrh. ℥ij. Aq. font. ferv. ℥iv. m. ft. solut. adde Vin. ant. ℥j. Tinct. theb. gtt. xxx. m. Of this, a table spoonful is the dose.

the Peruvian bark, the unpleasant taste of which it disguises.*

MIMOSA NILOTICA.

It is said, that several different plants in Egypt furnish gum arabic, though the purest sort is the product of the one above named.

Of the gums, this is the most generally employed, and, for medicinal purposes, it might, with advantage, be made to supersede all other articles. As an expectorant, it is prescribed in tickling coughs, and still more as a demulcent in dysentery, diarrhœa, cholera infantum, &c. Nearly with the same view, it is freely given to prevent or remove strangury from blisters, and to soothe the ardor urinæ attendant on the inflammatory affections of the urethra.

In pharmacy, gum-arabic is also found useful, “serving to suspend heavy powders in water, to diffuse oils, balsams, and resins in the same vehicle, and to give tenacity to substances made into pills.”

It is, moreover, prescribed as an article of diet, particularly in the complaints of the alimentary canal. To this we have probably been led by its light and supposed digestible nature. That it is bland, and without stimu-

* *Pectoral Balsam of Liquorice.* This nostrum consists of a rich solution of liquorice with paregoric, strongly impregnated with the oil of aniseed.

lation cannot be denied. Yet, I strongly suspect, that there are few matters received into the stomach, which prove less tractable to the operations of that viscus. It passes through the bowels very little changed, as I have a hundred times observed, and, we are told, that it even reaches the urinary bladder pretty much in the same state. Nevertheless, there are not wanting facts to attest its nutritive qualities, and, among others, the very strong one mentioned by Hasselquist, of its sustaining, for a length of time, a caravan, whose provisions were exhausted.

ULMUS RUBRA.

This country furnishes several species of elms, all of which are, perhaps, in some degree medicinal. But it is the red or slippery elm* which is mostly employed. The inner bark of this tree, by infusion, affords a viscid, mucilaginous matter, which is now, especially by country practitioners, extensively applied. As an expectorant or demulcent, it is a favourite remedy in catarrhs, in the declining stage of pleurisy, in consumption, &c. It is also found not less beneficial in the complaints of the urinary organs, and its reputation is still better established in diarrhœa, and, above all, in dysentery.

That it does good in the latter disease, and even more than other mucilages, I am inclined to be-

* *Ulmus rubra* of Muhlenburgh.

leve. To this point I have much evidence in my possession, though my own experience with it is limited. It is known to many, that the late Dr. Grant, of Virginia, had, for nearly half a century, an unrivalled reputation in the part of the country where he resided, in the management of dysentery. His practice, as he once informed me, consisted in little more than purging moderately in the commencement, and subsequently using freely the elm mucilage. By this alone, he declared, that the bloody stools, tormina, tenesmus, &c. were more speedily removed than by the ordinary remedies. Even admitting one half of this statement to be correct, the article will still appear highly deserving of attention.

As an external application, it has not been less employed. It forms an excellent emollient poultice, even milder, it is said, than bread and milk, or flax-seed. This is a good deal resorted to in country practice, in ulcers, recent burns, chilblains, cutaneous eruptions, and in the discussion of tumors and other swellings. By many of our army surgeons, it is highly esteemed in gun-shot wounds, and is said sometimes to be beneficial in arresting a tendency to mortification. Like other mucilaginous matters, it is nutritive, so much so that it constitutes one of the resources of our Indians in extreme emergencies.

Excepting the emetic substances, all the articles of which I have treated, may, perhaps, be considered as demulcents. If they have any expectorant power, it

is in so feeble a degree, as hardly to entitle them to a place in this latter class. But the medicines now to be enumerated, do most unquestionably operate on the lungs, and, in some way, relieve those organs in certain states of disease.

AMMONIACUM.

Ammoniac is a gummy resinous concrete, imported from Egypt and the East Indies. Of the tree which produces it, nothing is ascertained with certainty, though it is presumed to be the *heracleum gummiferum*.*

Ammoniac was once much employed as a deobstruent in visceral obstructions. But it has so completely lost its reputation, as no longer to be prescribed in these cases. Of late, on the continent of Europe, they are recurring to its use, and I know it to have been one of the remedies of the late Dr. Wistar in hepatic obstructions. Whether it be really entitled to credit under such circumstances, my own experience does not enable me to say.

As an expectorant, its reputation is much better established, it proving highly serviceable in cases

* Willdenow raised this tree from seeds commonly found among the gum of the shops. It was before thought to be afforded by a species of *ferula*, of the same family as the plant that produces *asafœtida*.

where the lungs are heavily oppressed. To the coughs of aged people, to some cases of pituitous asthma, to the advanced stages of peripneumonia notha, and, sometimes, to consumption, it is well suited. The common mode of administering ammoniac is in emulsion, denominated lac ammoniaci,* though it is occasionally prescribed in the shape of pills. The dose is ten or fifteen grains. Excellent as are the powers of ammoniac, they seem to be improved, in most instances, by uniting with it the squill, antimony, laudanum, &c. Nitric acid may also be added to it as directed below,† and, from this mixture, I have witnessed salutary effects, where a large accumulation of purulent or viscid matter existed, with feeble and difficult expectoration. Externally, ammoniac is applied as a discutient, in the form of a plaster, prepared by beating it into a soft mass with vinegar, and spread on leather. It is said to have done good in white swellings, indolent tumors, &c.

* Vid. Dispensatory.

† Pour very gradually two drachms of nitric acid, diluted in eight ounces of water, on two drachms of ammoniac—to be triturated in a glass mortar till the gum is dissolved, forming a milky fluid. Of this a table spoonful may be taken every two or three hours in sweetened water. Laudanum, in some cases, may be usefully added.

SCILLA MARITIMA.

No expectorant is more generally prescribed than the squill, and none, perhaps, is better deserving of confidence. Being actively stimulant, it requires to be directed with some circumspection. To the cases enumerated under the preceding article, it is best suited, and is often united with it in the proportion of one or two ounces of the oxymel, or vinegar of squill, to eight ounces of the ammoniac emulsion. Exhibited alone, the dose of either of the above preparations is about a drachm. As an expectorant the squill in substance is rarely ordered.*

ALLIUM SATIVUM.†

The whole of the alliiciæ are expectorant. But garlic is decidedly the most active, and in many of its qualities resembles the squill. It may hence be given in similar cases, and, probably, with equal advantage. As an expectorant, it answers best in the shape of an oxymel, which may be prepared by digesting the garlic in vinegar, and afterwards boiling the liquid with a portion of honey. The expressed

* Vid. Emetics and Diuretics.

† Vid. Antilithics.

juice, mixed with syrup, is often given, and, after the reduction of febrile action, is one of the best remedies in croupy and catarrhal affections, especially in children and very old people.

FERULA ASAFŒTIDA.

This article is commonly placed among the anti-spasmodics, and I shall, under that head, treat of its general properties. But it is also expectorant, and in this view I must not altogether neglect it. Coughs, connected with pulmonary weakness and a tendency to spasm, are the ordinary cases in which it is employed. It is, sometimes, serviceable in tussis senilis, and of its great utility in the secondary stage of whooping-cough, there is even less doubt. The saturated watery solution is the only preparation now prescribed in these cases.*

ARUM TRIPHYLLUM.

The Indian turnip is a native of the United States. It has a bulbous root, which, in the recent state, is exceedingly acrid, emitting, on being sliced, a sharp pungent exhalation. By the process of exsiccation much of this is lost, though, in swallowing, the acrimo-

* Vid. Antispasmodics.

ny is still sensibly felt about the fauces. Of our indigenous plants, this has the highest reputation, in provincial practice, as a remedy in pulmonary affections. It is prescribed in phthisis pulmonalis, in asthma, and in protracted coughs. My experience with it is not extensive, though I have seen enough of its use to be convinced, that it is among the most active of our expectorants, and so far may be serviceable in old catarrhs and other pituitous cases. Experience shows, that, like many other acrid articles, its effects are local, the general system not being sensibly influenced by any dose of it. The dried root, boiled in milk, is the mode in which it is given. As an external application in tinea capitis, tetter, &c. an ointment made with the recent root is used.

ACTÆA RACEMOSA.

This is a very beautiful native plant, known by the provincial titles of rattle weed, rich weed, and black-snake root. I do not know, that I am correct in placing it among the expectorants. Its powers are various, though no one is so predominant or well ascertained, as to enable us to assign it the most appropriate position. By the late Professor Barton, it is located among the astringents, and he tells us, that a decoction of the root was used as a gargle in a putrid sore throat, which prevailed in New Jersey. Besides this property, which I have never been able

to discover in any degree, it is expectorant, narcotic, antispasmodic, diaphoretic, and, in a large dose, emetic. Given so as to affect sensibly the system, we find, first, some nausea, followed by greater freedom of expectoration, and more or less relaxation of the surface, with slight nervous tremors, and vertiginous affections. The pulse, during this state, is considerably lowered, and is apt to remain so for some time.

My motive for placing this article among the expectorants, is the reputation which it has acquired in pulmonary diseases, especially asthma and consumption. Its use, it is true, has hitherto been confined pretty much to popular practice, though there is not wanting some better evidence of its efficacy. It is alleged, in consumption, to lessen the frequency of the pulse, to allay the cough, to quiet the mobility of the system, and particularly to subdue hectic fever. How far this is true, my own experience does not enable me to say.

POLYGALA SENEGA.

This is one of the best of the expectorants. To pneumonia, under almost all circumstances, it is, at least in popular practice, applied, and the confidence reposed in it, in some parts of our country, has long been, and still continues, exceedingly high. Considering, however, its stimulating nature, it ought not

to be thus indiscriminately employed. Excepting typhoid pneumonia, it is inadmissible in the early stages of the acute complaints of the chest. But, after inflammatory action has been reduced by previous depletion, it comes in exceedingly well as an expectorant, and, perhaps, also, as having a tendency to relieve congestion of the lungs, by promoting determinations to the surface. It is in this way that it operates so beneficially in the pneumonia of infirm people, which is always attended with debility of the pulmonary organs, and, consequently, with large and oppressive lodgments of phlegm or mucus.

During the last twenty years, however, the seneka has, in regular practice, been more in repute in *cynanche trachealis*. It was first brought into the treatment of this affection by Dr. Archer, of Maryland, who spoke of its powers with unlimited praise. To every form and stage of the disease he thought it adapted, sometimes prescribing it as an emetic, and under other circumstances as an expectorant. It may certainly be so administered as to answer each of these purposes, though the more correct opinion seems now to be, that its use should be restricted to the secondary, or ultimate stages of the disease—and as an expectorant.

I have never attempted to do more with it. As an emetic, either the tartarised antimony or ipecacuanha, alone or combined, has seemed to me preferable, as regarding certainty of operation, as well as inducing a greater degree of relaxation. But to overcome

hoarseness, and other sequelæ of the disease, I have found it exceedingly useful.

The seneka may be given in powder or saturated decoction. But the latter is to be preferred in the cases before us. The dose of the first is from ten to twenty grains, and of the second half an ounce or more.*

AMMONIÆ CARBONAS.

On this article, which is among the most important of the materia medica, I shall treat largely in another place.† It may, therefore, be now sufficient to state, that it is administered, and with great advantage, to relieve the lungs of oppression in the advanced stages of acute pneumonia, sometimes in consumption, as well as in several other pectoral affections hereafter to be mentioned.‡

* Vid. Diuretics.

† Vid. Stimulants.

‡ Vid. Diaphoretics.

POTASSÆ CARBONAS,

ET

SODÆ CARBONAS.

Neither the vegetable nor mineral alkali has ever before been arranged with the expectorants. But that they operate beneficially in the diseases of the lungs, by favouring excretion and restraining cough, is indisputable. Of late, they have become very popular remedies in pertussis, with every description of practitioners, and the praise of originally directing them in this case, is accorded to Dr. Richard Pearson,* of London. His prescription is as follows.† But at the moment that this preparation was generally employed in regular practice, a combination of the salt of tartar and cochineal‡ was put forth, I do not know by whom, which has gained such general confidence, as to supplant almost every other means in the treatment of the complaint. My experience with the two alkalies is now sufficient to enable me to pronounce with some certainty on their efficacy, which I do not

* I find, however, the alkalis were earlier used.

† ℞ Carb. sod. gr. iii. Vin. ipecac. gtt. v. Tinct. theb. gtt. i. Aq. font. ℥i. This is the dose for a child one year old, to be repeated every three or four hours.

‡ ℞ Carb. potass. ℥i. Pulv. cochin. gr. x. Sacch. alb. ℥i. Aq. ℥iv. Of this, half a table-spoonful is the dose.

at all doubt. To the same purport we have the concurrent evidence of many respectable physicians, and the popular voice, strongly expressed. That the full effect of the medicine, however, may be attained, it should be given in much larger doses than is ordered in the preceding formulæ.

Nor are the powers of the alkalies limited to pertussis. I am persuaded that they will be found beneficial in all cases, where a mild expectorant, or cough medicine, is demanded. Of the comparative merits of the two, I cannot judge. Lately, I have been in the habit of prescribing the potash, which appears to be the case with the other medical men of this city. But I am not aware that this preference rests on any solid grounds.

In what manner the alkalis operate, in these affections, is not very intelligible. It is alleged, that they neutralize or correct the acid sordes of the alimentary canal. That accumulations of such foul matter, do exist, especially in pertussis, and that the lungs will be sympathetically affected, in consequence of gastric irritation, are facts as well attested as any in pathology. Coughs of an inveterate character, even running on to consumption, I have sometimes met with, which could be distinctly traced to this source. It is not, therefore, altogether improbable, that such may be the *modus operandi* of these substances. They undoubtedly have a very considerable effect, in removing irritations of the mucous surfaces, and especially of the *primæ viæ*. Nevertheless, I do not perceive

the necessity of resorting to a chemical solution of the problem. Contrary to common opinion, the alkalies really exert a pretty decisive agency on the system. This is illustrated in several diseases, and particularly in those of a periodical nature. It is well ascertained that a few grains of the carbonate of soda, added to a small portion of Peruvian bark and Virginia snake-root, constitute one of the most efficacious remedies in ague and fever. As the alkalies act in these cases, so, most likely, do they in pertussis, by a strong and peculiar impression made on the stomach, extended by consent of parts.

COLCHICUM AUTUMNALE.

An oxymel or syrup of the meadow saffron has been used as an expectorant on the authority of Baron Stærk. I have not prescribed it myself. Whoever is disposed to try it, should bear in mind the great activity of the article, and accommodate it accordingly to the case.

By some of the late English writers we are told, that the vinous tincture of the seeds of the colchicum is eminently useful in the pectoral affections, not so much, however, as an expectorant, as by its sedative influence, reducing vascular action, and calming irritation. In a word, it seems, for such purposes, to have supplanted digitalis in a great degree, and now

receives much of the exaggerated praise formerly bestowed on that article.*

BALSAMICA.

In the original acceptation of the term, *balsams* were those medicines by which wounds are healed, and of course included articles of very different qualities. But the definition has been narrowed down so as to apply only to a set of fluid, odorous, inflammable substances, which closely resemble the tercbinthinate preparations.

Consulting medical history, we shall find that the "vegetable balsams" were once in such high repute, as to constitute the chief reliance in "colds, coughs, and consumption." But this vague and indiscriminate application brought them, after a while, into complete discredit, from which they have scarcely yet recovered. Among those that mainly contributed to their rejection, was the celebrated Fothergill, who loudly denounced the propriety of the practice, especially in phthisis.† As often happens, in instances of this nature, he carried his objections too far, and has, in my opinion, done harm, by abridging our resources.

All the balsamic medicines are, without doubt, more or less stimulant, and hence unsuited to the in-

* Vid. Diuretics.

† Vid. London "Medical Observations."

flammatory state of any of the complaints of the lungs, whether acute or chronic. But action having been sufficiently subdued by the direct depletory measures, I am sure that they may be safely and advantageously prescribed in protracted coughs and catarrhal consumptions. My own experience has satisfied me on this point, and, without hesitation, I recommend an imitation of the practice.

Numerous as are the balsamic articles, they all essentially correspond in their medicinal virtues, differing, indeed, chiefly in the degree of efficacy. The Tolu I have found to be the mildest, the least unpalatable, and, in every view, the most valuable as an expectorant.

BALSAMUM TOLUTANUM.

This is afforded by incision from a tree of South America, called *Toluifera Balsamum*. The juice, thus obtained, speedily thickens, so as to become concrete. Both water and spirit act upon it, producing a solution: the one, boiled to a certain consistence with sugar, is called the syrup, and the other the tincture of Tolu.*

The dose of the balsam, or of either of those preparations, is forty or fifty drops. The tincture is the

* The Balsam of Honey, a nostrum vended in the shops, is a preparation of Tolu, and one of some efficacy in protracted catarrhs.

most convenient in the administration, and, united with laudanum, and the tincture of digitalis, proves very often of great service in protracted coughs and catarrhal consumption.*

BALSAMUM COPAIVÆ.

To what I formerly said of this article I have little to add. The power of the Copaiva, over the morbid states of the mucous surfaces, is sufficiently established. It is hence useful in the weak chronic inflammations of the bronchial system, as well as to restrain its excessive secretions.†

BALSAMUM PERUVIANUM.

This balsam is derived from the *Myroxylum Peruiferum*, a tree of South America. In its qualities, it is essentially the same as the other balsams, and is used pretty much for similar purposes. Lately, however, it has acquired some reputation in tetanus, on the authority of a most respectable practitioner,‡ who

* ℞ Tinct. Tolu. ℥j.

—— Digit.

M. —— Theb. āā ℥j.

Of this mixture 40 or 50 drops may be taken several times a day in a little sweetened water.

† Vid. Diuretics.

‡ Dr. Kollock, of Savannah, Georgia.

states, that he has seen several cases of that disease from wounds, cured by the internal and external use of it. The application of it as a vulnerary in ill conditioned ulcers, and particularly to prevent or arrest gangrene, has also within a few years been revived, and some very satisfactory evidence is afforded of its efficacy in these respects.*

The dose of the balsam is twenty or thirty drops, and of the tincture, which is sometimes found in the shops, double this quantity.

INHALATIONS.

Of these it is proper I should say something as a means of promoting expectoration, and to meet several indications, connected with an oppressed or ulcerated condition of the lungs, in which they have been resorted to with advantage.

Every practitioner is familiar with the use of the vapour of water alone or with vinegar, in catarrh, pneumonia, asthma, and a variety of other affections, where expectoration is difficult and deficient.

To render this species of inhalation more stimulating, boiling water may be poured on Balsam Tolu, in the proportion of an ounce of the latter to a pint of the former. This is well suited to those cases of the same diseases, in which the accumulations are owing to extreme debility of the lungs, or are re-

* Vid. Dr. Ainslie's paper in the Asiatic Journal.

tained by the viscosity and tenacity of the matter. Mudge's Inhaler, so called from the name of the inventor, is very convenient for the application of the remedy. But, where it cannot be had, a common tea-pot may be substituted.

Nearly with the same views, sulphuric ether is strongly recommended, and we are told, by very respectable authority,* that its powers are improved by several substances which are soluble in it. Cicuta is particularly praised, half a drachm of which is to be digested in an ounce of ether, for several days, so as to form a saturated tincture. Of this, two or three tea-spoonfuls are to be put into a wine glass, to be held up to the mouth, and inspired. My knowledge of this remedy enables me to speak confidently of its utility. I have tried it often, in dyspnœa from different causes, and generally with advantage. It is very useful, as was originally suggested, in consumption, especially if repeated several times in the day.

But, perhaps, a still more valuable remedy of this sort I have derived from Dr. Physick. It consists of a tea-spoonful of Hoffman's anodyne liquor, and another of laudanum, which mixture is to be breathed for half an hour or more at a time.

In the forming stage of catarrh, in obstinate coryza, and in hoarseness of recent or long standing, its effects are most striking and decisive. The principle on which it acts, is obvious. The parts are here more or less inflamed, which state is relieved by the *coun-*

* Dr. Richard Pearson.

ter agency of the fumes coming in contact with them.

Camphor, which is known to possess the power of evaporation in a high degree, has recently been employed for nearly the same purpose.* The mode of application is to hold a piece of it close to the affected part. It is said, when used in this way, to be very effectual, in stoppage of the nose, *snuffles*, and in ophthalmia. Mixed with warm water, the vapour is alleged to be no less serviceable in some cases of croup, in cynanche tonsillaris, in common inflammations of the chest, in spasmodic coughs, and such like affections generally.

Assuming the fact, which I think not well established, that the external use of camphor repels gout and rheumatism on the internal organs—he further proposes the inhalation of the article, to drive back these diseases to their original positions.

The fumes of concentrated pyroligneous acid, I have directed beneficially, in foul ulcerations of the nostrils and throat, and particularly in ozæna, to correct the foetid discharges, as well as to improve the condition of the sores.

Nitrous vapours have also been recommended in pertussis and other pectoral complaints. The little experience, however, which I have had with them, in the former affection especially, has not inspired much

* By Dr. Badtcher of Copenhagen. Vid. Phil. Med. Journal, Vol. iv. p. 422.

confidence, proving so exceedingly irritating, that they cannot be long endured.

Not altogether dissimilar in its effects to these inhalations, is the practice of smoking certain substances. Tobacco is one of this description, and though, according to Stahl, it affords no relief in ordinary catarrhs, it is highly beneficial in consumption. There is, probably, no foundation for this distinction. Yet Stahl was so convinced of it, that he proposes it, as a criterion by which we may determine the precise nature of these cases. It is only in certain asthmatic affections that I have been able to perceive any utility in the practice. But he who delights in cigars will tell us, that nothing more effectually promotes expectoration in recent catarrh, as well as in the chronic pectoral complaints.

During the last few years, no slight attention has been directed to the smoking of stramonium, as a remedy in asthma and certain cases of dyspnœa. But strong as is the evidence adduced in its favour, I am inclined to suspect that its powers are not considerable. My practice has presented me with cases suited to its exhibition, sufficiently varied to determine its efficacy. In asthma, I have sometimes mitigated the force of the paroxysm by its use, though I am not sensible that I ever made any permanent impression on the disease.

In consumption, attended by violent cough and impeded respiration, I have found it quite as serviceable. It will, occasionally, under these circumstan-

ces, calm irritation, and induce a state of comparative ease, which it does, by a combined sedative and expectorant power. Even this, in many of the cases of this terrible disease, is a very desirable attainment. Yet it is doubtful whether it does more, or even so much, as opium used in the same manner. The root of stramonium, previously washed, dried, and bruised, is employed for this purpose.

By some writers, and among these is Dr. Bree, the author of a well-known Treatise on Asthma, it is asserted that stramonium, when thus prescribed, is always useless, and often highly dangerous, or even fatal, by producing apoplexy, and other serious complaints. To this, I can only reply that my own observations teach me differently. The only effect which I have seen from it, has been analogous to those induced by the influence of tobacco.

The practice has once more been revived in Europe and in this city, of attempting to heal ulcers of the lungs by the fumes of certain vulnerary and balsamic articles. What is the exact degree of benefit derived from it, I cannot determine positively. My own experience is not satisfactory, though I will not absolutely condemn the practice. More than one of my medical friends speak favourably of it, and I am not disposed to controvert or deny their statements. Candour, however, compels me to say, that, as respects the terebinthinate preparations, and these are chiefly employed, I have uniformly found them so irritating, that they could not be continued without

doing manifest harm. Even sulphur or mercury, both of which are much milder, likewise prove offensive to the lungs, and excite violent coughing.

This, I have said, is an old practice renewed. Looking into the writings of more than a century back, we shall see, that the practitioners of the time were much attached to it. By Stahl, crude antimony is pointedly recommended with this view, and Bennet, in his work on consumption, extols sulphur and the balsams. More recently, Mudge, to whom I have already alluded, prescribed ether, tar, &c. and Linnæus the hypericum. But, though the practice will probably be found not to answer the purpose proposed, it still may be recurred to, occasionally, to stimulate the lungs to throw off their contents when loaded and oppressed.

As to consumption, more may, I think, be expected from tar fumigations as recently employed. Encouraged by the event of an experiment made on a patient placed in a rope manufactory, Dr. Crichton, now physician to the court of St. Petersburg, has treated some few cases of this disease with success, by these fumigations. The tar is put into an earthen vessel over a lamp, or heated iron, so as to cause a volatilization, till the air of the ward is sufficiently impregnated, which process is repeated three or four times a day.

Without entertaining any very sanguine hopes, that this or any other means will prove essentially useful in genuine consumption, I would not, in the slightest

degree, discourage a trial of this new plan. It comes to us on good authority, and surely nothing promises more in these internal ulcers, than healing measures directly applied. Tar, on every account, its acknowledged balsamic properties in external sores, the tolerance of the lungs under the impression of its fumes, and the facility of its application, is the article which presents the strongest claims to our confidence and attention. To this it may be further added, as affording corroborative evidence, that a residence in the cedar and pine swamps of this country during the summer months, is well known to have been sometimes productive of advantage in pulmonary cases.

Yet it will be found most probably to answer best in chronic catarrh, or bronchitis, and similar states of the mucous tissue of the lungs and their appendages. We have indeed, some pretty strong evidence, that these fumes are serviceable in the advanced stages of pertussis attended with difficult respiration from oppressive accumulations in the bronchial structure.

SECTION III.

Of Anthelmintics.

By anthelmintics, we understand those medicines which either destroy or expel worms situated in any part of the alimentary canal. This class is exceedingly extensive, and has been variously arranged. There is, indeed, hardly any article of the materia medica, which has not, under certain circumstances, evinced more or less of a vermifuge property.

The anthelmintics are endowed with very different powers, and operate in several distinct modes. There is one set which may be considered as poisonous to these animals. There is a second, which are mere evacuants of them, as the purgatives. There is a third, which are mechanical irritants. There is a fourth, which operate indirectly, by changing that condition of the stomach and bowels on which the generation, and, perhaps, subsistence of the worms depend.

By some writers, the preceding division has been made the basis of an arrangement of these medicines.

I do not perceive any very serious objection to it, though, as each species of worm requires, in a certain degree, peculiar remedies, it will, probably, in a practical view, be more advantageous to treat of them in this last relation. It is still, however, to be understood, that some of these articles are equally applicable to every sort of worm, and that they are thus indiscriminately employed.

The worms which infest the alimentary canal of the human subject, may be divided into round and flat, each of which forms, according to the strict rules of classification, a genus. The species of the round worm are the lumbricoides, the ascarides, and the trichuris or tricocephalus.*

The teres, or ascaris lumbricoides, as the first of these worms is sometimes called, resembles so nearly the common earth worm, that it has been considered as the same, or a variety of the same animal.† By closely inspecting the two, however, a very material difference will be observable. The residence of the lumbricoides is chiefly in the duodenum, jejunum, and ilium. They are rarely detected either in the large intestines or stomach. When in the one or the other of these places, they are, for the most part, endeavouring to escape out of the body, having been

* By Professor Brera, of Pavia, who has written with great ability on the subject of worms, another species is added, namely, the vermicularis. This he describes as having a head similar to that of the tænia, united to a vesicle full of water, and very curiously organized. It is found in the brain, and various other parts of the body, including the primæ viæ.

† Linnaeus.

rendered previously uncomfortable by disease, or some active medicine.

The teretes are from five to ten or twelve inches long, of a cylindrical shape, except at the extremities, about the size, when fully grown, of a common quill, and are often found to exist in very great numbers. Two hundred of them are recorded to have come away from a child of eight years of age in the course of a week, and I have known nearly half this number to be voided in a younger child in less time.

The ascarides, or *ascaris vermicularis*, are very diminutive, not being more than half an inch long, and resemble a fine white thread cut into pieces, and, by reason of this, are called *thread worm*. Commonly, they occupy the rectum, though, in some instances, they have been met with in the stomach, and hence denominated *man worm*. They also, occasionally, occupy the vagina of women. Of the different species of worm, these are by far the most numerous, sometimes existing to an extent almost incredible.

The trichuris, or *long thread worm*, is about two inches long, with a tail twice the length of its body, having also a proboscis, which it can protrude or withdraw at pleasure. It is of rare occurrence, and has not been very accurately described.* I have seen

* I have not seen Hooper's book, which is said to contain a very accurate delineation of it. We are told by Brera, "that one part of the body terminates in a filamentous elongation, as fine as a hair, and coiled round in a very surprising manner—the other part turning in a spiral

it only twice—in two children of the same family. It is said to reside principally in the ilium.

Of the flat worms, the *tænia* is the only one. This is a very extraordinary animal. It is of great length, being from ten to two hundred and fifty feet,—found sometimes curled up, or entangled like a bunch of tape, to which it has been compared. By late writers, two species of *tænia* are described.* The extensive chain in the first of these, consists of “links, or joints, which occasionally fall apart, each one becoming a distinct worm, possessed, for a time, of independent life, and from their resemblance to the seed of the gourd, called *cucurbitina*.” Each species resides in the small intestines.†

The origin of worms would constitute a subject of very curious and interesting speculation. It belongs not, however, to my province to indulge to any extent in inquiries of this description. I should at once be led into an intricate discussion relative to the generation and modes of nourishment of the whole tribe

form, most commonly terminates in a hook, broad and obtuse, and similar to the pistil of the liliaceous flowers. From this extremity, the worm can put forth a sort of tube enveloped in a sheathe.”

* *Tænia osculis marginalibus*, and *tænia osculis superficialibus*.

† Of the *tænia*, Professor Brera gives an account somewhat different. He divides this worm into two varieties, the armed and unarmed *tænia*. The first is the *tænia cucurbitina*, or solitary worm, and the other *tænia lata*, the chief difference between them consisting in the former, or armed *tænia*, having on its head two protuberant and pointed appendages, which serve as crotchets or fangs. Whether its chain separates into pieces, as I have stated, on the authority of some writers, does not appear.

of parasitical animals, of which little is satisfactorily ascertained. But, though not much has been absolutely determined as to the origin of worms, we are pretty well acquainted with the circumstances which favour their production. In all cases of diminished strength and emaciation of frame, however induced, and especially if the bowels share in this debilitated state, we may, in a child, suspect either their existence or speedy generation.

Children, from the first to the fifth year, are said to be more liable to worms than at any future period. Of this fact, there can scarcely be any doubt, though how to account for it, is not so easy. It has been imputed to the circumstance of their having, at this early season, a larger quantity of mucus in the bowels, which is thought to serve as a nidus, or matrix, for the generation, development, and support of these animals. This hypothesis unquestionably receives some support from the consideration, that a slim and penurious diet, consisting of crude vegetables and unripe fruit, is favourable to the production of worms, and hence they always abound in the low and poorer classes of society.

But whence are derived the principia or rudiments of the animal? To this question, a satisfactory answer has never been given. It is alleged by some, that they are taken into the stomach with food. But such a conjecture is refuted, at once, by the fact, that these worms are peculiar to the human species, not being seen in any other animal, or in any other posi-

tion : and, moreover, they have sometimes been discovered in the stomach of fœtuses and very young children, even within the month. Nevertheless, let it not be imagined for a moment, that I am disposed to lend any support to the antiquated notion of equivocal generation. By its adoption we are not at all helped out of our difficulty, and certainly would depart very widely from a correct philosophy.*

It has long been a matter of controversy among practitioners, whether worms are in themselves noxious, or ever prove the original or accessory cause of disease. This point was once warmly debated. While on the one hand it was maintained, that almost all the complaints of children are influenced, in a greater or less degree, by the irregular movements of these animals, it was, on the other, as strongly insisted, that they are entirely harmless, and therefore, merit no

* There are some facts, which have lately come to my knowledge, that give a strong support to the theory of the external origin of worms. The second volume of the Transactions of the Dublin College of Physicians, contains a very interesting paper by Dr. Barry, in which he gives an account of a spring near Cork, replete with the ascarides, so that persons using the water become most terribly affected with these worms. The inquiry in this case seems to have been so carefully conducted, and the whole of the statements so well authenticated, as to preclude, altogether, doubt or hesitation as to their accuracy.

It appears, also, that one species of tænia was found by the celebrated Pallas in the waters of Siberia, and, we are told, that the inhabitants of the fens of Lincolnshire are peculiarly liable to ascarides, and the Hollanders not less so to tænia, ascribable to the state of the uterus.

Clarke, a veterinary surgeon of great respectability, has, moreover, discovered that the bots in horses proceed from the eggs of a fly, the *Aestrus Equi*.

sort of consideration. By some of the disputants it was even declared, that worms are highly useful as executing the duties of scavengers, removing the indigested sordes, and preserving clean the stomach and bowels. Nothing is less correct, or would be more dangerous than this extravagant notion, if carried into practice.

Whoever is conversant with the complaints of children, and has attended to them, without any of those prejudices which pervert the judgment, must acquiesce in this sentiment. I have had again and again occasion to witness a variety of diseases, which either originated, or were kept up and aggravated, by the irritation of worms. There is, indeed, scarcely a complaint which the presence of these animals will not excite or imitate. Cases are recorded of their producing epilepsy, catalepsy, chorea, tetanus, apoplexy, mania, hydrocephalus, ophthalmia, perverted vision, paralysis, especially of the muscles subservient to speech, syncope, palpitations of the heart, hiccup, dry cough, pleuritic pains, consumption, cynanche trachealis, rheumatic pains of the joints, dysentery, convulsions, &c. To these may be added, a peculiar fever termed *verminosa febris*. This is a slow and irregular remittent. The exacerbations are attended with heavy drowsiness: the remissions with a morbid vigilance. There is pain in the bowels, and at the pit of the stomach, with occasionally purging, and a good deal of gastric distress.

The head is much affected, sometimes painfully, though, for the most part, with stupor or delirium. The eye is wild, the pupil dilated, the alæ of the nose contracted, the cheeks flushed, the forehead polished, as if glazed. The case, in short, presents so many of the appearances of hydrocephalus, that it is easily mistaken for that disease. Two symptoms, however, most commonly attend, which are peculiar and distinctive. These are, a very *strange alteration of voice*, and, in some instances, a *total loss of speech*.

But, it is proper for me to state, that by Butter, a name which holds a respectable place in the annals of our science, it is positively denied, that this species of fever is at all occasioned by worms. It is contended by him, with no little plausibility, that it proceeds entirely from crude accumulations in the intestinal passages, and he recommends for its cure, purging. In a great majority of cases I think he is right, though it is still manifest to me, that he has laid down his position too generally, and without making those exceptions which are found sometimes to exist.

Considering, therefore, worms as a cause, and a very serious cause too, of disease, I shall endeavour to point out the symptoms by which the different species may be distinguished, and to assign to each the appropriate set of anthelmintics. As occasioning most of the affections which I have noticed, I shall commence with some observations on the lumbricoides.

LUMBRICOIDES.

It has already been mentioned, that worms may be suspected in a child where there is emaciation, and especially weakness of the bowels, accompanied by discharges of slime or mucus. The reverse of this is said sometimes to happen, or the most robust and florid children will have worms, and suffer much inconvenience from them, without any serious detriment to health. But cases of this sort are rare, so much so, that I am not aware of ever having met with worms under such circumstances.

Among the more uniform symptoms of worms of this sort, are those of intestinal irritation, pains in the belly, alternations of diarrhœa and costiveness, great thirst, and variable and often voracious appetite. The child sometimes becomes hungry, almost immediately after eating heartily—and, at other times, the appetite is feeble and depraved, soliciting strange and *outré* articles, as dirt, chalk, &c. There is, moreover, fœtid breath early in the morning—the complexion is pale, or sallow, or leaden, with occasional flushes—swellings of the lips, and especially of the upper lip—watery mouth, sometimes even copious discharges of saliva—enlargement of the nostrils—a livid circle round the eyes, dilatation or contraction of the pupil, with a fixed unmeaning expression, and tumidity or distention of the belly, particularly at night. The sleep is dis-

turbed, the child often awaking with great terror, and is liable to startings—with grinding of the teeth. During the day he picks his nose—is tormented with temporary headache—sometimes has a dry cough, with a slow fever—the pulse being hard, tense, and corded, and there is a disposition to spasmodic or convulsive affections.

Taken alone, no one of the preceding circumstances will be conclusive of the existence of worms.* But several of them concurring, there can be little or no doubt of the fact, and we are accordingly to resort to the proper remedies.

* “The ambiguity of every symptom,” says an intelligent writer, “ascribed to worms, except that of voiding them, is well known.”

SECTION IV.

Of particular Anthelmintics.

HYDRARGYRI-SUB-MURIAS.

OF these, one of the most efficacious is calomel, which should be given in the largest dose over night, and worked off the succeeding morning, by castor oil, or some more active cathartic. If the first dose does not answer, the medicine is to be repeated several times, at the interval of two or three days.

All the more active purgatives, as jalap, scammony, gamboge, colocynth, sulphur, aloes, &c., seem to possess, in a greater or less degree, the power of removing worms. The treatment, indeed, in these cases, consisted, at one time, very much in the employment of such articles. Whether they operate in any other mode than as mere evacuants is questionable. Even in this way, they often prove serviceable, and very much so, as auxiliaries to the more determined vermifuge medicines.

SPIGELIA MARILANDICA

The pink root is an indigenous vegetable, growing in the southern states, and especially in South Carolina. Every part of the plant is possessed, in some degree, of the vermifuge property, though the root is incomparably the most active. This is a powerful medicine, sometimes inducing all the effects of a narcotic poison. It is probable, that by virtue of this very property it proves so destructive to worms. But a different view of its *modus operandi* has been entertained by some, who, considering it merely a purgative, refer to its action on the bowels the whole of its vermifuge efficacy.

To this representation I cannot agree. Certainly, in my hands, the spigelia has several times proved useful without at all purging, though I think it more effectual when it does so actively. This medicine may be given either in powder or decoction. Of the former, the dose for a child is, from five to ten grains, and of the latter, half an ounce or more, to be repeated occasionally. But, whichever prescription is adopted, some brisk purgative should be added, and the calomel or senna is to be selected, as the one or the other mode of exhibition is preferred. By this combination, we increase the power of the medicine, and entirely prevent any unpleasant nervous affections.

Of late, we have a powder, prepared by an apothecary in this city, which has acquired no slender reputation. It is vended as a nostrum, the composition of which is ascertained to consist of spigelia with some other articles.* It is very efficacious, and I do not know a better formula in most cases.

Distinct from its vermifuge property, the pink root is thought to do good in irregular remittents. This opinion was early adopted by the southern physicians. Of its correctness to a certain extent, I am satisfied, and can hardly doubt, that every practitioner who has largely used the medicine, must have seen it do good in the febrile affections of children, though no worms were brought away.

HELLEBORUS FÆTIDUS.

This is a native vegetable, common also to many parts of Europe. As might be expected from the title, the smell of the recent plant is offensive, and with a bitter taste, remarkably acrid and nauseous.

Though I never have used the hellebore, I do not distrust its powers. It is favourably spoken of by some of the ablest practitioners in this country and in Europe. There was formerly in this city a Dr.

* & Rad. Spigel. Mariland :	ʒvj.
Fol. Senn :	ʒij.
Fol. Sabin.	ʒss.
M. Mann : opt.	ʒij.

Dewitt, who acquired great celebrity in the treatment of worms by a medicine, the composition of which he disguised. But, ultimately it was discovered, by the late Dr. Kuhn, to consist of this species of hellebore, and a small portion of ethiops mineral.

In the exhibition of hellebore, caution is necessary, it being poisonous, and sometimes operates dangerously. The dose of the dried leaves, for an adult, is from five to ten grains, to be repeated for several nights successively.

MELIA AZEDARACH.

This is a very beautiful tree, which grows in the southern states. Denying it to be a native of the American continent, it is said by some naturalists to have been originally brought from Japan, and other parts of the eastern world. It, however, has become completely naturalized among us, and flourishes well. It is known in different parts of the country by various other appellations, as the pride of China, or China-tree, the pride of India, the poison-berry tree, or tallow tree.

My knowledge of this medicine is slender, yet the few trials I have made with it, lead me to attach some value to it. In Georgia it has become a popular remedy, and I am assured that it is there even more used than the pink root. It is, indeed, considered, by many respectable practitioners of that section of

the country, as decidedly superior to all other medicines in lumbricoides. Whether it is equally noxious to the other species of worms, does not so clearly appear. I have no knowledge myself of its utility either in tænia or ascarides. But I am told, that it has been advantageously employed in the first of these cases.

The vermifuge virtues reside in the root, or rather in the bark of the root. The most common preparation of it in the southern states, where it has hitherto been chiefly prescribed, is a saturated decoction, of which, for an adult, a small tea-cupful is directed for several mornings in succession. It may also be exhibited in powder, though the former preparation seems to be preferred.

CHENOPODIUM ANTHELMINTICUM.

The Jerusalem oak is a native of nearly every part of the new world. Being hardy, it grows almost equally well under every degree of latitude, and in every variety of climate. It is found in Canada, and in the Brazils.

No portion of the plant, I believe, is destitute of efficacy. Expressed from the recent leaves, the juice is given to children, morning and night, on an empty stomach. It is more common, however, to reduce the seeds, emphatically called worm seeds, to a coarse powder, and to administer it in the same way, mixed

with molasses or syrup. The dose must in most instances be repeated for several days.

Lately, there has been extracted from the seeds of the chenopodium an oil, which has become a fashionable remedy—so much so, as nearly to supersede all other anthelmintics in the practice of this city. It is indiscriminately prescribed in every species of worms, and is thought to be highly beneficial.

For a child of two years old, the dose is six or eight drops morning and night. After continuing it for three days it is to be intermitted, and a mercurial purge given. If worms are not then discharged, and their existence still suspected, we may again recur to its use in the same manner as before. This is the substance of the printed directions accompanying the medicine. The dose recommended, however, is too small, and may be increased with safety and advantage.

To the oil, as well as to all other preparations of the chenopodium, the chief objection arises from its very unpleasant nature. It is to the taste an acrid bitter, and has an odour singularly offensive, and so tenacious, that nothing can dispel or mitigate it, for some hours. Could we dispossess the article of these qualities, it might be considered, perhaps, as among the most valuable of the anthelmintic medicines.*

* The seeds of the chenopodium are sometimes added to the prescription, noticed under the head of *Spigelia Marilandica*.

It has this advantage over most of its kindred articles, that it is an excellent tonic, well suited to the cases of weak stomach and impaired digestion, which so often attend worms, or the simulated affections.

TANACETUM VULGARE.

The leaves and flowers of this plant, which is indigenous to Europe, are, in popular estimation, decidedly anthelmintic. In common with wormwood, rue, and other nauseous, strong scented-bitters, it is very likely it may prove offensive to worms, and contribute to their expulsion. Tansy, I have indeed heard very highly commended by some respectable practitioners. It may be given in powder or infusion. The dose for an adult is a drachm of the former, and a tea-cupful of the latter, to be occasionally repeated.*

GEOFFRÆA INERMIS.

The cabbage bark tree is a native of the West Indies, and particularly of Jamaica. The bark is the only part used as a vermifuge, and may be prescribed in the form of powder, decoction, or extract. But the decoction is generally preferred, and is prepared by

* Tansy tea is a very common remedy in this city for suppression of the menses, and I have reason to suppose it sometimes is productive of advantage.

slowly boiling an ounce of the dried bark roughly pulverised, or bruised, in a quart of water, till it assumes the colour of Madeira wine.

In the administration of this medicine we should proceed cautiously, as, in an improper dose, it will occasionally produce some unpleasant consequences, such as violent vomiting and purging, delirium and fever. Even under any circumstances, it has appeared to me very apt to distress the stomach and bowels, and hence I have been deterred from freely using it, especially in children; though I am not the less convinced of its efficacy. To this point we have the concurrent testimony of all the West Indian practitioners, as well as many of those of Europe and this country. The dose of the decoction, for an adult, is two table-spoonfuls, of the extract three grains, and of the powder half a drachm. It should be repeated for several days, and then an active purgative exhibited. Those who are best acquainted with this medicine, direct that cold water should never be drunk during its operation, as it sometimes occasions very serious effects. Of this I know nothing myself, having, indeed, very rarely used the article.

ALLIUM SATIVUM.

Cloves of garlic, previously bruised, and steeped in molasses, constitute one of the most popular remedies for worms in this city—and which I have often

seen used with great effect. This mixture, though offensive at first, is soon taken by children, with avidity, and may be eaten *ad libitum*.

ARTEMISIA SATONICA.

The seeds of this plant, which have a bitter acrid taste, and a disagreeable odour, have long been employed as an anthelmintic. What is their precise utility, I have had no opportunities of determining. They are directed variously, though the most common mode is in substance, in the dose of ten or fifteen grains for a child a few years old.

CAMPHORA.

In every species of worm, camphor has been prescribed. But we have lately learnt from Brera, that it is most effectual in the expulsion of the lumbrici. It may be exhibited in the shape of a julep, prepared according to the established formula.

FERRUM.

Most of the chalybeates are supposed to be useful in worms. But, perhaps, on the whole, the carbonate of iron is to be preferred, and is now usually em-

ployed. Yet I am doubtful whether it has any real anthelmintic virtue, and presume it proves serviceable merely by invigorating the alimentary canal, and rectifying its secretions. When worms have come away under its use, I have uniformly remarked that it had purged actively, and, to attain this effect, I sometimes unite rhubarb with it.



ASCARIDES

As formerly mentioned, these are small worms which occupy the rectum, or, at least, most commonly the lower portion of the intestinal tube. They may be distinguished by the itching kept up in the anus, which sometimes amounts to an immoderate degree of irritation, and is generally aggravated in bed, so that sleep is often prevented. I have even known inflammation, and a considerable swelling about the fundament to take place, accompanied with tormina, tenesmus, and bloody stools.

To these symptoms may be added all the signs which denote the presence of the other description of worms. But there is one circumstance, which, in many cases, is conclusive of their existence. They are apt, especially when disturbed, to creep out of the

rectum, and may often be seen entangled in the excrementitious discharges.

CALOMELAS.

Of the general remedies in this species of worm, calomel, in combination with some drastic purgative, seems to claim the greatest confidence. It has been a good deal prescribed by me, and with very variable results, having sometimes found it effectual, and in other instances completely to fail, which, however, is pretty much the character of all the anthelmintics.

ALOETIC PREPARATIONS.

The aloetic medicines, as might be presumed from their peculiar affinity to the rectum, the principal seat of ascarides, have proved occasionally serviceable. Exhibited in the ordinary way as a purgative, aloes will sometimes answer well. But I cannot help thinking, that the *hiera picra*, which is known to consist of aloes and *canella alba*, is a more powerful and efficacious remedy. Why it should be so, it is not easy to conceive, as the latter ingredient is in itself not active, and enters into the composition in a small proportion.

It has often succeeded with me, in cases which had previously baffled all my efforts. In the ordinary manner of prescribing it, an ounce of the powder is dissolved in a pint of ardent spirits, of which, sufficiently digested, a table-spoonful diluted may be given to a child three or four years old, in repeated doses, till it purges copiously. It is probable that a watery solution might do quite as well as the spirituous: but the former is the common one, and, having found it successful, I have not ventured on any innovation. The strength of the menstruum is much abated by the ingredients. Combinations of aloes with the salt of steel, in nearly equal proportions, I have known to prove exceedingly effectual in ascarides, as well as lumbricoides.

ENEMATA.

These cases will often be most successfully managed by injections. Being situated in the rectum, within the reach of the remedy, the worms may be mechanically washed out, or, which oftener happens, they are destroyed by the deleterious substances used for that purpose.

As an enema, nothing has answered better with me, than a drachm or two of aloes, dissolved in a pint of milk. But, with the same view, lime water, olive oil, the juice of rue, or tansy, or wormwood, or garlic, an infusion, or the smoke, of tobacco—camphor tea,

—a solution of asafœtida, of the hepar sulphuris, of mercurial ointment, or of common salt, may all be tried. The last I have prescribed with unequivocal advantage.

The injections having been repeated, as often as may be deemed expedient, it will be right to give an active purgative. Being rendered sick and feeble by the previous remedy, the worms will now be more readily brought away by the operation of the purge.

TRICHURIS.

Of this worm I have little further to say. It is to be distinguished, so far as I know, by no peculiar symptoms, and probably might be managed with equal success, by some of the means which are resorted to in ascarides, or lumbricoides.

TÆNIA.

We have no symptoms which very clearly distinguish this worm. Its existence, perhaps, is more generally attended by a steady gnawing, or an irregular *biting* sensation at the pit of the stomach, and by an indescribable wretchedness, which is always incident to the gastric affections. Emaciation of the body is said more rapidly to take place from it, than from the other worms, in some cases even amounting to atrophy. While this wasting is going on, the appetite is enormous. The belly becomes distended, and there is sometimes a pretty constant sense of coldness in it, attended by an irregular turning motion and weight on one side. The complexion is, for the most part livid, or leaden, and the eyes are wild and distracted, or sunken and suffused with tears, with pupils widely dilated or much contracted. The head is often affected with acute pain or vertigo, and the whole nervous system becomes deranged, as is indicated by tremors, convulsive twitchings, inability to walk firmly, and, in some instances, by well marked symptoms of paralysis. An anomalous symptom of tænia, is a sense of extreme tension in the nose. Now and then, the existence of this worm may be positively determined, by a discharge of small substances resem-

bling gourd seed, which we are now told are the marginal papillæ of the worm, though hitherto considered as the links of its chain.

MERCURIAL PREPARATIONS.

In the treatment of tænia, the mercurial preparations have been tried, and, probably, on the whole, with as much success as any other class of remedies. They are, however, extremely fallacious, having, indeed, in the few cases which have come under my notice, proved generally inefficient. Yet they have, undoubtedly, done more good in the hands of other practitioners. I have used calomel, ethiops mineral, and corrosive sublimate. The latter, which has recently acquired considerable reputation, should be given in solution, and in the dose of a fourth or sixth of a grain.

DRASTIC PURGATIVES.

Most of the drastic purgatives have been used in tænia. This is the case with jalap, scammony, coly-cinth, elaterium, and, above all, gamboge, which, in very large doses, is extolled as a sovereign remedy. Not less than twelve or fifteen grains of it will do, as the most active purging is necessary for the expulsion of the worm. Of this practice, my own experience

will not enable me to say much, though, I think, that the active cathartics will be found to be among our best remedies under such circumstances. The Croton oil has recently been a good deal extolled for this purpose, and, I suspect, justly, since it unquestionably proves very efficient in the expulsion of other worms.*

POLYPODIUM FILIX MAS.

The male fern has been prescribed in tænia since the time of Galen. Too much has been said of its efficacy, in these cases, to doubt it altogether, and yet, from my own observations, I should be induced to rate its powers very low. The dose of the fern is from one to three drachms, to be taken in syrup, or simply washed down with water. To promote its operation, a strong purgative is to be given after a few doses, and if the worm be not expelled, the same course should be repeated.

Cullen thought it very doubtful whether the fern has any anthelmintic property, he being inclined to suspect, that all the effects imputed to it may be

* Gamboge enters largely into several of the nostrums for tania. The famous specific of Herrenschwand, which, at one time, excited so much curiosity in Germany, was composed, according to his own declaration, of "from ten to fifteen grains of gamboge, with from fifteen to twenty of kali." But, on being analysed, by order of Elizabeth of Russia, there were found in it, besides, both mercury and arsenic.

The specific of Clossius has also gamboge for its basis.

referred to the cathartic with which it is generally combined. This suspicion, however, does not seem to be well founded, as in Germany, where the medicine is much employed, and highly celebrated, it is exhibited alone. Many cases might be adduced in support of its utility. There is one in particular related by Dr. Jones of New York, of a lady, who, after taking numerous worm medicines, with little or no effect, drank a decoction of fern, a pint daily, till some gallons were consumed, when a worm came away measuring forty-five feet. It may be further remarked, in support of its efficacy, that the fern constitutes the basis of Madame Nouffers's well-known remedy for tape-worm, the secret of which was purchased by Lewis XV. of France, at an exorbitant price.*

The United States produce several species of fern, which probably possess the same powers as the European, though this is mere conjecture, as none of them, I believe, have hitherto been subjected to experiment. The most common American species, is the Polypo-

* These are substantially the directions of Madame Nouffers: "Three drachms of the root of the male fern, reduced to a fine powder, and mixed with any simple water, and swallowed at a dose. Two hours after taking the powder, twelve grains of calomel, as much resin of scammony, finely powdered, with five grains of gutta gamba, must be taken in a bolus. If the patient is of a strong constitution, or has been used to violent purgatives, this dose may be increased."

The following is the once famous prescription of Stoerk, with which, he says, he has "destroyed all sorts of worms:"

℞ Sal. polycrest. Pulv. jalap. —. Valerian. āā ℥j. Oxymel scill. ℥v. m. exhibeatur adultis quater per diem ℥ss, junioribus vero ℥j. aut ℥ij.

dium Virginianum, which grows in the neighbourhood of this city, as well as in many other districts of our country.

DOLICHOS PRURIENS.

This is a plant of the West-Indies, and the parts used in medicine are the hairs or spiculæ attached to the pod. The operation of this article is said to be purely mechanical, being supposed to prick the worms, and in this way to expel them out of the alimentary canal. It might be suspected that the same degree of irritation would be felt by the inner coat of the intestine, and that, therefore, the medicine might prove injurious. Experience, however, has taught the contrary. Taken in the quantity of a table-spoonful mixed in syrup or mucilage, it is said to be both a safe and efficacious remedy. I have never employed it, though so highly extolled by many respectable practitioners.*

* By some recent experiments, we are taught, that the good effects of the Cowhage do not depend on any mechanical operation. The spiculæ, either macerated or comminuted, were found equally effectual as in the original state.

STANNUM.

The filings of tin, or the powder made by heating it nearly to the melting point, and shaking it briskly, may be employed. The dose is one or two drachms, mixed with syrup, to be taken for several mornings in succession, and then purged off by an active cathartic.* It was long supposed that the efficacy of tin, in these cases, is owing to the arsenic which it contains. But, it has been found, that the purest metal answers as well, and its operation is now commonly referred to mechanical irritation. As, however, it is proved, that, when reduced even to an impalpable powder, tin is not less effectual, this hypothesis must also be abandoned. Of late, it is conjectured, that it acts merely by the hydrogen it generates in the alimentary canal, and this opinion is supported by the allegation, that its powers are increased by a mixture with sulphur, by which sulphuretted hydrogen is evolved.

In addition to the preceding remedies, there is a variety of others which have been suggested at different times, for the cure of tape-worm, among which may be enumerated, sulphur, the blue and white vitriol, sal ammoniac, arsenic, very large doses of castor-oil, decoction of the bark of pomegranate, the

* Alston, who first recommended the tin filings in tænia, gave, in some instances, an ounce at a dose.

samphire, &c. The only article, however, the powers of which have been sufficiently attested, to be entitled to particular attention is, perhaps, the following.*

OLEUM TEREBINTHINÆ.

This is given in the dose of from half an ounce to two ounces, in the morning, when the stomach is empty. It commonly excites an agreeable warmth, without any sickness or other gastric distress. After a while, however, some patients are apt to complain of giddiness, slight pain in the head, and, sometimes, when taken in the largest dose, of thirst, and other febrile sensations. But these speedily pass away, leaving behind no serious consequences.

It appears that this remedy, which probably acts as a poison to worms, is most effectual when given by itself,† and that strangury, and other unpleasant effects, are more likely to occur, if it be employed in the ordinary small doses, than when exhibited so as to purge. My own experience does not enable me to say much of this article in tænia. Twice I have pre-

* It has been proposed, in cases where the worm protrudes at all beyond the anus, that a drop or two of prussic acid should be applied to it, so as, at once, to terminate its existence. That it would prove effectual, is highly probable, and I cannot perceive any danger in the experiment.

† The liquid carbonate of ammonia, with turpentine, has lately been said to have proved a very effectual remedy in tænia.

scribed it, where I suspected the existence of this species of worm, and in one instance a very large number of lumbricoides was evacuated, while in the other, no such effect followed, though the symptoms which led me to its use were removed.

Yet of the utility of the turpentine in tænia, there can be no doubt. The late periodical journals abound with proofs of it, proceeding from some of the most distinguished of the English practitioners,* and it has been successfully used in this city.

Bold as the practice seems to be, I do not think we have any thing to apprehend from it. In one of the cases to which I have alluded, I gave a wine-glassful of the turpentine for several days successively, and the man declared, he felt no more from it, than from the same quantity of ardent spirits.

Being so efficacious in tænia, it is reasonable to suppose, that the turpentine will prove still more so, in the less intractable species of worms. The fact which I have stated, of its evacuating the lumbricoides, is sufficient of itself to encourage us to a further trial in such cases.†

I have now completed the consideration of the best means for the destruction or expulsion of worms. Little, however, would be accomplished in most cases, were we not to prevent their reproduction, which can

* Eclectic Repertory, Vol. I. p. 414.

† I have lately given a combination of turpentine with castor-oil, very successfully, in several of these cases.

only be done by the removal of the causes that promote their generation and nourishment.

As formerly observed, every species of worm seems to have its origin and support in a weak and depraved condition of the digestive organs. The indication, therefore, is to restore to them the proper degree of vigour, which may be done by the exhibition of lime water, bitter tonics, the preparations of steel, and by a due regulation of diet, with whatever else conduces to the confirmation of health.

We are told by Brera, that camphor is particularly serviceable with this view, by counteracting the “predisposition to the further development of verminous seeds.” How far this is true, I cannot say. But the carbonate of iron I have found highly useful in doing away that condition of the *primæ viæ*, which favours the production, or continuance of worms. Common salt, pretty freely used, is also excellent under similar circumstances. To this purport we have some very interesting facts. It is stated, in one of the Reports of a Committee of the House of Commons, respecting the salt duties, that, by an old law of Holland, criminals were punished by being kept on bread without salt, and that, to use the language of the writer, “the effect was most horrible, these wretched creatures having been devoured by worms, engendered in their own stomachs.” We learn from the same source, that the people of Ireland, who, on account of their extreme poverty, were unable to purchase salt, from the enormous duty on that article, became

sickly, and especially with gastric and intestinal complaints, and, as a consequence, much infested with worms.

The importance of this article is further illustrated by the eagerness with which it is sought after by most animals, and that, when deprived of it, they pine away, and become emaciated, probably from worms. By the shepherds of England, a common expedient to cure sheep of worms, to which they are singularly liable, is to turn them to feed, for a few weeks, on the salt marshes, which is represented as very effectual. Aware of this fact, lord Somerville, who is, perhaps, the largest owner of sheep in the world, and the most successful in the preservation of them, allows a ton of salt to every hundred, a year.

Taken all together, these facts are very curious, as showing the necessity of this condiment to our well being, and its particular efficacy in the case before us.

SECTION V.

Of Epispastics.

THE etymology of this term warrants a more extensive meaning than is commonly affixed to it. Literally, it signifies *to draw*, and may be used in the same sense as *attrahentia*. But, as the epispastic substances generally excite a blister, the term is, at present, received as synonymous with *vesicatoria*, or *vesicantia*. By the ancients, all external applications which redden or inflame the skin, were called epispastice, and designated, according to their several degrees of effect: the slightest being entitled *phœnigmoi*, the next *sinapismi*, the more active *vesicatorii*, and the strongest *caustici*.*

In treating this subject, I shall arrange what I have to say, under the heads of *rubefacients*, *blisters*, *setons*, *issues*, and *caustics*. But, as blisters are the most important, and demand the largest share of attention, it is right, perhaps, to commence with the

* Parr's Medical Dictionary.

history of these applications. I shall thus escape from many repetitions, which otherwise would be unavoidable.

BLISTERS.

By these we mean such external applications as cause the exhalants to pour out a thin serous fluid, separate the cuticle from the true skin, and produce vesication. The manner in which this is done is very intelligible, and admits of a plain and satisfactory explanation. By the irritating nature of the substance, the extremities of the arteries are excited to an increased exhalation or effusion, which collecting, is retained by the impervious cuticle. Of the precise mode in which blisters operate in the cure of diseases, we are still uncertain, though this is a point which, at different periods, has occasioned numerous disquisitions, and eager controversies. It is fortunate, that the calm and attentive practitioner has pursued his path unmoved by these speculations, and, carefully observing the effects of the remedy, has ascertained, with, perhaps, sufficient precision, the time and circumstances when it becomes proper to recur to it.

Nevertheless, I can scarcely admit of any unusual obscurity in the *modus operandi* of the vesicating applications. No one, I presume, at present, could be found to support the ridiculous hypothesis, which referred the effects of blisters to the absorption of the

acid particles of which they are composed into the circulation, and to the subsequent stimulation thereby imparted to the system. Many arguments might be adduced to show, that even strangury is never occasioned in this way, much less that we are to seek an explanation of the general action of blisters in the process of absorption. Not, however, to press a point which is of no great practical importance, I shall mention only one or two leading objections to the vulgar notion on this subject.

It seems to me, that, if strangury do thus arise, it ought invariably to take place on the application of a blister. But, so far from this happening with uniformity, it is an incident of comparatively rare occurrence. Nor does it less follow, that this affection ought always to be in proportion to the size of the blister, and the time it is kept on. These circumstances, however, have little or no influence in the production of strangury. It is moreover known, that the internal use of cantharides is seldom attended by any such effect, and, when it does occur, it is more frequently from small than large doses of the article.

These, perhaps, are reasons sufficient to refute the opinion to which I have alluded, without an appeal being made to the general improbability of any article reaching the circulation unchanged. It would really appear, in the case before us, that absorption is, in a great measure, suspended, since, were this process to go on as usual, the fluid must be taken up as

fast as it is effused, and no accumulation could take place.

The exact cause of this species of strangury is not determined, though it is well known that a great variety of articles besides cantharides, and some of these by no means of an acrid nature, excite it. Thus it is pretty constantly brought on by the *solanum nigrum*, and I have seen it caused by camphor.* We have some cases recorded of its proceeding from the use of opium. Even the diuretics, and these, too, of the mildest sort, including nitre, often occasion it. Whatever, in short, is possessed of a peculiar relation to the urinary organs, has a tendency, exhibited largely, to induce strangury.

As this is indisputably true, may we not account for it on the principle of extended action through the medium of sympathy? Cantharides are universally allowed to be one of the articles of the *materia medica*, which most conspicuously display their affinity to the urinary organs. Applied in the form of a blister to the surface of the body, they excite a local impression, which, by virtue of the consent of parts, is propagated in the mode I have just mentioned. This, at least, is the solution of the difficulty which accords best with my medical creed, and I think, too, with the existing state of our medical intelligence.

Contemplating the operation of a blister, more than one mode is presented in which it may be serviceable

* Heberden mentions a case of this sort, and I once saw it induced in typhoid pneumonia, from the free use of the medicine.

in the treatment of diseases. By the increased action it excites, the primary effect of the remedy is indubitably stimulant, though, from the quantity of fluid poured out, it would appear also to be ultimately evacuant. But among experienced practitioners, little hesitation prevails as to which of these operations the best effects of blisters are to be ascribed. Excepting some cases of cellular dropsy, I am not aware that any great advantage is derived from this kind of depletion. Certain it is, that the relief afforded is not proportioned to the quantity of fluid evacuated, and often the most signal benefit accrues, where little or no discharge takes place.

Demonstrated by the clearest evidence, it is now admitted, with regard to the living body, that an existing morbid action may be removed by inducing a new and different impression in the same part. It is on this principle that we can explain the extraordinary efficacy of epispastics in local inflammations. Nor is it less a law of the animal economy, that, in many instances, a very strong impression made on a part, has the effect of soliciting or drawing towards it, morbid action existing in some remote portion of the body. It is this which we understand by the term revulsion, and which we habitually perceive illustrated in the operation of vesicatories, and similar applications. Blisters, however, have a more pervading effect, and hence are useful in complaints of a general or constitutional nature. They act here, as in the former case, by their stimulating power, increasing

the force of the circulation, and heightening excitement, as happens in typhous fever, and many other low diseases.

That these remedies are cordial and exhilarating is further proved, by their efficacy in nervous affections, whether distinguished by a preponderance of mental or corporeal infirmity and weakness. It is somewhere recorded of the celebrated Dunning, an eloquent barrister of the London bar, that on great occasions, when he was called upon to make the finest displays of his powers, forensic or parliamentary, he put on a blister, and found that, while it elevated his mind, tone and vigour were imparted to his body.

On the whole, in estimating these remedies, it will be prudent, as a guide in practice, to consider them as stimulants, sometimes acting by inviting morbid excitement from distant parts,—at other times by producing a local impression which overcomes the existing one,—and as calculated generally to sustain or revive the strength of the system. Yet, it is not to be concealed, that a different view has been taken of their operation, and, among others, by Cullen, who, depreciating their stimulant and evacuant effect, is disposed to ascribe their utility chiefly to the property of relaxing spasm.

That they are, to a certain extent, antispasmodic, is sufficiently shown by the great advantage derived from them in many of the spasmodic affections. But this they do by a mere modification of the stimulant power, in the same way that they tranquillize the sys-

tem and compose to rest, under circumstances of excessive mobility, either natural or acquired.

I am next to make a practical application of blisters to the cure of diseases, and, considered in this light, they become exceedingly interesting and important. As preliminary to the main discussion, I shall suggest some few rules for their employment.

1. Let the blister remain on till it draws effectually. The ordinary time required for this purpose is ten or twelve hours: but on the head, at least double this period, and in this case, to prevent strangury, the hair should be removed several hours previously to the application of the blister, if such a delay be admissible. This is an interesting practical fact, first communicated to me by the late Dr. Kuhn, and which, I have since ascertained, is noticed by Heberden. Children, owing to delicacy of skin, are much more speedily blistered, and hence, in their cases, it may be earlier removed. Being continued too long, it sometimes induces gangrene, as I have witnessed in two or three instances.

2. It will be right, especially in local affections, and in the whole of the phlegmasiæ, to apply the blister as nearly as possible over the immediate seat of the complaint, its efficacy thereby being much increased. Let it also be as large as the nature of the part will allow. Large blisters give scarcely more pain than small ones, and are generally beneficial in the ratio of their dimensions.

3. In those individuals liable to strangury, or where, from excessive irritability, much pain is excited, it will be proper to remove the blister after three or four hours, or as soon as the rubefacient effect is produced, to bathetic part with a mixture of olive oil and laudanum, or fresh lard, and re-apply the blister. This will sometimes succeed in doing away the inconvenience. But, if it fail, a soft emollient poultice may be substituted, which, so far as I have tried, generally soothes irritation, and produces well-filled vesications. As preventives, it will also be prudent to direct the free use of diluent beverages, as flaxseed tea, barley-water, or a solution of gum-arabic. To cure strangury, the same drinks are serviceable, though not so much so as the parsley or wild carrot tea. But, if the affection be violent, as sometimes happens, we must resort to more efficient remedies, such as fomentations to the pubes, or the warm bath, or camphor, balsam copaivæ, turpentine, and, above all, to opium, particularly in the form of an enema.

4. Never recur to blisters in diseases of the higher grades of action, till the system is reduced by venesection and other depleting measures. Too early employed in such cases, they hardly ever fail painfully to increase irritation, and exacerbate morbid excitement.

5. In the very advanced stages of disease, blisters should be applied to the thighs, shoulders, back, neck, breast, or head, and never to the ankles or wrists, as here, on account of the lowness of tempe-

rature and feebleness of action at the time, they either do not draw at all, or, if they do, it is imperfectly, occasioning a weak species of inflammation, which is apt to become gangrenous.

6. In putting on a blister, care should be taken to adjust it to the part, and so to apply the bandages, as to secure it against slipping, which gives unnecessary pain, and prevents it from drawing well. This may be done by strips of adhesive plaster, which will be found exceedingly convenient in the application of blisters to portions of the body in which there is much motion, as to the sides, neck, &c. It is a common practice to bathe the part previously with warm brandy or vinegar. In certain cases, however, where the drawing of the blister is doubtful, from a low state of system, it will be better to excite irritation by frictions with the spirit of turpentine, or by a sinapism.

7. The usual dressing for a blister is simple cerate spread thinly on linen. If there be much irritation, lard perfectly fresh, by which I mean without rancidity or salt, should be preferred. A mixture of lime water with olive-oil, or lard, as in burns, sometimes affords much relief. To keep open a blister, the weak epispastic, or savin ointment, is employed.

SECTION VI.

Of the Practical Application of Blisters.

CONFORMING to the course which I have hitherto pursued, I shall commence with some remarks on the use of blisters in the febrile affections.

As a remedy in intermittents, they are not generally employed, though, undoubtedly, sometimes highly useful. I have in more than one instance seen them successfully applied as a preventive of the paroxysm, when so managed as that the full impression should be felt at the anticipated moment of attack. Even where the effect is not so striking or immediate, they are not without utility. Constantly kept up on the extremities, the irritation which they induce will, after a time, so interrupt the trains of morbid association, constituting this form of fever, as frequently to put an end to the worst cases of it, acting here very much on the same principle as a mercurial salivation. Nor are they less demanded, in those cases of the disease attended by visceral congestion, or in-

durations of a painful and inflammatory nature. Little, indeed will tonics avail, till such obstructions are removed, and, with this view, a succession of blisters over the affected part ought never to be neglected.

In relation to continued fevers, there is a wider difference of opinion, as to the propriety of the vesicating applications. By some writers, they are altogether condemned, and, among these, the most distinguished by weight of authority is the celebrated Fordyce. It was one of the notions of his great and original practical mind, that blisters have not the slightest tendency to arrest the progress of fever, maintaining, on the contrary, that the new irritation which they occasion proves an accessory cause.

Perhaps it is not difficult to reconcile the contrariety of sentiment on this point of practice. Nothing is more opposite than the effect of a blister; in the early and advanced stages of fever invariably doing harm, while there is much arterial action, and as uniformly proving beneficial in properly reduced states of the vascular system.

The more ordinary continued fevers of this climate are the bilious inflammatory, and typhus—the latter, however, occurring much more rarely, and for the most part, in winter. My practice is to recur to blisters in the former of these fevers, whenever I find the disease continue, after thorough evacuations of the alimentary canal and blood-vessels, and especially if there be displayed any typhoid disposition. Blisters;

under such circumstances, should be applied to the extremities, and, by the stimulation imparted, they are often productive of manifest advantage.

But in the yellow fever, a disease essentially dissimilar, though it has been maintained to be the same in a more aggravated shape, blisters may be earlier resorted to, and differently applied. Taught by dissection, as well as by the leading phenomena or symptoms, that the stomach is the seat of this pestilence, inducing a malignant gastritis, a prompt application of a large blister over the region of this viscus is obviously indicated, and experience confirms its utility.

As regards typhous fever, a course somewhat different should be pursued. It seems now to be ascertained, that the brain is the part on which it mainly expends its force. We have, in the commencement of the disease, evidence of a great determination to this organ, and not less in the subsequent and advanced stages. Now the plain and intelligible indication is, to prevent or do away congestion or inflammation, and this is most effectually accomplished by local measures, such as cold applications, topical depletion by leeches or cups, and, finally, a blister, of sufficient dimensions to embrace the whole cranium.

It is not unknown to me, that objections have been raised to the last of these remedies. But they rest on no solid foundation, and are contradicted by the tenor of medical experience. There are certain points of practice so firmly settled, as no longer to be dis-

turbed by cavillers or wild speculatists, and among these is the efficacy of a blister to relieve the head in typhous fever, and especially where delirium exists. As well, indeed, might a practitioner deny the power of bark in intermittent fever, or mercury in syphilis, as that of a blister in the case which I have mentioned. Eccentricities of this sort are common in the history of the human mind, and we have no reason to hope that our science should escape them.

Considering the immense influence that the spinal marrow indirectly exercises over all the great functions of the animal economy, which recent experiments have proved, it seems not at all improbable, that much advantage might result from blisters and such like applications, to portions, or, perhaps, in very obstinate cases of fever, to the whole of the spine. Nor are we entirely without facts to verify this conjecture, though these are derived more from a trial of the remedy in the nervous and spasmodic, than the febrile affections.

To sustain the system in the sinking condition of typhous fever, it is a practice with many to apply blisters to the extremities. That they occasionally do good can hardly be doubted, though they often fail to draw, and, even where we succeed in this respect, the effect seems not always to be a very salutary one. The fact is, under such circumstances of depression, even if the blister draws well, the general sympathies are so broken and subverted, that action is not at all extended, the system at large refusing to re-

respond to the local impression. As more certain means of stimulation, rubefacient embrocations have been preferred at this conjuncture, and, on the whole, they will be found to answer best.

Of the order of phlegmasiæ, I know not a single case in which blisters are not employed. But of the numerous affections comprehended under this term, there are some in which the remedy is more particularly demanded. Every practitioner is aware of its efficacy in the whole of the acute pneumonic cases, though some discrepancy of opinion may be traced as to the time when it should be applied. My rule, which I have reason to suppose is sanctioned by good modern authority, is to postpone the blister, especially in pleurisy, till some considerable reduction of arterial action is effected. At this precise period it proves unequivocally useful, by extinguishing the remnant of pain or oppression, and seems also to arrest the further march of the disease. Earlier than this, I have found that blisters scarcely fail to occasion great distress to the patient, and assuredly aggravate the symptoms which they are intended to relieve.

Yet an opposite course is pursued by some of the ablest practitioners of this country and of Europe, and with alleged success—to which I can only reply, that the counter-evidence decidedly preponderates, and that my own experience, which I slowly give up to any one, tells me that I am right.

The preceding remarks have reference only to confirmed ordinary pleurisy. Either in the *forming*

state of this disease, or where it occurs in a debilitated system, or in the peripneumonies of aged people, a blister may unquestionably be applied at once, without any preliminary depletion.

To the anginose affections, blisters are well suited, and particularly to cynanche tonsillaris, and trachitis or croup, though their application should generally be preceded by pretty active evacuations, and, if attainable, by topical bleeding with leeches or cups.

Of the inflammatory affections of the alimentary canal, there is no one in which blisters are more unequivocally useful than gastritis itself. Excepting, indeed, venesection, they are the only remedy entitled to much confidence in this case, and the same may be said of enteritis, &c.

Dysentery, though not thus *located* by the nosologists, is, indisputably, when it assumes the inflammatory shape, a case of this order. Most writers agree as to the utility of blistering in this disease, differing, however, in relation to the part where the application is to be made. Influenced by the apprehension of excessive pain when made to the abdomen, the extremities are often preferred. This is an instance of mischievous lenity, proceeding, I am persuaded, from an erroneous impression. Delayed, which it ought always to be, till the force of inflammatory action is abated, a blister is then productive of comparatively little distress while drawing, and, sometimes, by the ease and comfort which it affords, it even composes to sleep. To the extremities it is, on the contrary,

more painful, and of no avail unless the case be so far reduced or protracted as to partake of the nature of diarrhœa, or is blended with intermittent fever.

Cholera morbus is another case in which blisters are employed. To check vomiting, they are often applied over the stomach, or to the extremities. Either position will do very well: in exhausted states of the system, sinapisms are to be preferred. These remarks are equally applicable to cholera infantum, with this difference only, that such applications are more rarely, and never so urgently required.

Not less to overcome the spasm, which causes the obstruction, than to obviate inflammation, blisters are among our most effectual resources in colic, and on no occasion, perhaps, more conspicuously manifest their antispasmodic power.

It would be superfluous to go through in detail the several visceral inflammations, such as hepatitis, splenitis, hysteritis, peritonitis, nephritis, and cystitis, since, in the use of the remedy, we are governed by one common rule, namely, to withhold its application till the force of the case is broken by previous depletion. As some practitioners, however, distrust the propriety of blistering in the affections of the urinary organs, from the fear of inducing strangury, or otherwise adding to the existing irritation, it may be useful to observe, that actual experience has shown the fallacy of these speculative objections, and fully attested the safety and efficacy of the practice.

Of the utility of blisters in rheumatism, every one is persuaded. Yet even here they are productive of harm, if prematurely applied, and, where it can be conveniently done, should be preceded by local detractions of blood. My conviction is, that they are infinitely better adapted to chronic than acute rheumatism, almost always proving serviceable in the former instance, and especially when they induce the suppurative process.

By some writers it is recommended to blister the affected part in regular gout, and, as it proves so beneficial in analogous cases, we might imagine that it would be attended with the same results. But, on trial, I have been disappointed, and no longer employ applications of this nature. It has, indeed, been alleged, that blisters have the effect of repelling the disease on some internal part of more value to life, and hence are hazardous measures. Experience, however, has taught me, that such applications are the very best means to invite and fasten down, if I may use the expression, gout on the extremities, and I can have no idea of a remedy blowing hot and cold in this way.

Nevertheless, in misplaced or retrocedent gout, whether it attacks the alimentary canal, the lungs, brain, kidneys, or any other portion of the body, blisters over the immediate seat of the complaint are highly serviceable, and, sometimes, even indispensably necessary.

They are much used in phrenitis, and in all the affections of the brain, partaking, in any degree, of inflammation or congestion. No one disputes their utility in apoplexy, though doubts are entertained whether they should be put on the head or lower extremities. My own impression is in favour of the former position, derived from comparative trials on a scale sufficiently extensive to determine the point. Of their use in parylysis, I have before said so much as to require no further notice.*

As a remedy in mania, blisters have been generally extolled. To be serviceable, however, they require to be used with great discrimination. Directed too early, or while much arterial action exists, they invariably do harm. But the system being reduced by copious evacuations, they are well calculated to subdue turbulence, and equalize excitement. It is common to place them on the head, and here perhaps they are most effectual, though, while drawing, I have uniformly found that they produce an increase of the disease. If, therefore, such an exacerbation is particularly to be deprecated, it will be prudent to make the application to the limbs, and this position should also be selected in melancholia, and other weak forms of the disease, where it is desirable to arouse the system out of its torpor by vigorous stimulation.

Elsewhere I have said, that hydrocephalus consists in a peculiar action of the vessels of the brain, connected, for the most part, with a depraved condition

* Vid. Cathartics.

of the chylopoietic viscera.* As a part of the treatment of this case, blisters to the head are greatly relied on, and I believe deservedly. But we are to bear in mind, that they prove effectual, very much in proportion to the time they are kept on, and most so, when suppuration of the scalp takes place. They should never be applied till action is much reduced by the detraction of blood, and by purging, nor removed in less than twenty-four hours.

Of the treatment of ophthalmia, and some other affections of the eyes, blisters constitute an essential part. It is customary to apply them behind the ears, or to the temples, or back of the neck. They afford most relief in the last named position, where the attack is obstinate. On the brow, they are sometimes very successful, and may be put in certain cases over the orbit of the eye itself, by previously closing the lids with a thin strip of adhesive plaster.

In more than one of the profluvia, or diseases attended by increased discharges, blisters are occasionally directed. Applied alternately to the ankles and wrists, they frequently relieve cases of protracted diarrhœa, which have resisted every other means. Much advantage have I also derived from them in leucorrhœa. They are sometimes beneficial on the lower extremities, though incomparably more so, when put over the lumbar vertebræ or sacrum, and in the same position, are scarcely less serviceable in cys-

* Vid. Cathartics.

tirrhœa. Of their use in gonorrhœa and gleet, I have learnt little from my own observations. The practice, however, is commended by some of my medical acquaintance, and seems entitled to a share of confidence. Even still less do I know of their powers in diabetes, as my opportunities have been slender of seeing this disease. All the cases of it which have come under my notice could be traced distinctly to gastric derangement. Nevertheless, the kidneys, though secondarily, are always affected, and, for the purpose of calming the irritation of these organs, blisters seem to promise well. We are fully aware of their utility in other cases of preternatural secretion, as well as of incontinency of urine, and there seems to be no good reason why they should not prove serviceable in diabetes.

It has become a practice of late, perhaps more in this city than elsewhere, to treat some of the cases of hemorrhage by the vesicating applications. After arterial action is reduced by venesection, they are unquestionably serviceable in hæmoptysis: and, worn on the back of the neck, I have seen them suppress, in several instances, very troublesome bleedings from the nose. As respects uterine hemorrhages, I am not able to say much, though in that irregular species of menorrhagia, which occurs about the period of the cessation of the menses, I have known some good result from them, habitually kept on the ankles.

The exanthematous affections, in certain shapes at least, demand the use of blisters. To sustain the sys-

tem in typhoid or confluent small-pox, they have been found advantageous, and also in the same complaint, where the eruption suddenly recedes. Exactly with the same view are they directed in measles, under similar circumstances, and moreover to relieve the violent catarrhal affection which often attends or follows this disease.

The utility of blisters in arresting the malignant forms of erysipelas is established by the amplest experience. To the late Dr. Pfeiffer, of this city, the credit of this valuable discovery has been generally accorded. But the practice is of an older date, and, I think, may be found in some of the writings of M'Bride.

With nearly the same advantage, they are prescribed in scarlatina, to support the system when approaching the typhoid state, and, should the throat be affected, they are still more important as a topical application earlier made.

Of the class of neuroses, in which are included both the nervous and spasmodic affections, there is a great variety of cases in which they are more or less employed.

To vesicate the head in epilepsy, where the disease is supposed to originate from some morbid condition of the brain, is a common practice. Cases of this sort, however, are rarely curable by any course of practice, and blisters consequently are of little service. But, epilepsy seems also to depend, in many instances, on a certain mobility of the system, somehow

connected with a disordered stomach, which observes the laws of periodical recurrence. It is in such cases that, worn on the extremities, they now and then dis-sever the trains of morbid association, and thus suppress the disease. What would be the effect of vesicating the spine in epilepsy?

Of the use of blisters in tetanus I have no experience. Nearly half a century ago, a case was recorded by a West-India surgeon* of a cure having been accomplished of this disease, by the application of a strip of blister plaster along the whole extent of the vertebral column—and this practice, I have heard, has recently been imitated, and with sufficient success to claim our attention.

Certain spasmodic affections of the chest are sometimes benefited by the use of blisters, among which may be mentioned pertussis, asthma, and angina pectoris. Perhaps it may not be entirely out of place to mention here, that they are prescribed with advantage in some of the spasmodic complaints of the stomach, and particularly in gastrodynia and pyrosis.

In several of the cachetic cases, blisters are greatly employed. To repress inflammatory action of the lungs in pulmonary consumption, they admirably cooperate with general and topical bleeding, and should be so repeated as to keep up a discharge from the surface. After the suppurative process has commenced, however, they prove nugatory, and often increase the

* Mr. Carter.

mischief by aggravating the degree of irritation. Nevertheless, as expectorants, they are occasionally productive of relief, by invigorating the lungs in the protracted catarrhs of debilitated persons, and, perhaps, too, in some instances of consumption of this species.

Much as blisters have been used in dropsy, I cannot help suspecting, that they are an equivocal, if not a hazardous, remedy. My allusion is to their use in anasarca and ascites. To evacuate the water in the former case, they are applied to the lower extremities, and, though occasionally with success, they much more frequently fail to do good, and sometimes, as I have myself seen, induce gangrene.

From their application to the abdomen, not a great deal can be expected. Yet I have had one case of ascites, and know of another well authenticated, where the water was completely evacuated, and in a very short time, by this means.

Of the efficacy of blisters in hydrothorax there is not the slightest doubt. The disease, in the commencement, is, generally, of an inflammatory nature, and demands very active depletion, with the aid of constant irritation on the surface of the chest. Even in the advanced stages, a temporary mitigation of the more distressing symptoms is sometimes derived from the same measures.

To their employment in erysipelatous inflammation I have already alluded. Led by analogy, Dr. Phisick, some years ago, made trial of them in gangrene,

and the success which he then stated, has been so fully confirmed by the concurrent testimony of a large number of practitioners, as to place this very high among the great practical improvements. It would seem, that they are advantageous in cases of gangrene arising from opposite causes, and differing essentially in character and circumstances. I have known them to arrest the affection, when resulting from active inflammation, and not less promptly in one case, at least, in an œdematous limb, connected with a cachetic and exhausted state of system. Cases, however, of gangrene occur, such as are occasioned by mechanical interruption to the circulation, in which they can be of no service, and these, I suspect, will be found to constitute the only exceptions to the general use of the remedy. As our object is to check the progress of gangrenous action, the blister should be applied so as to embrace the whole of the healthy margin, and be managed afterwards in the ordinary manner.

In another place* I have noticed the utility of blisters in amenorrhœa. But this is not the only case of suppression in which they are serviceable. Wherever, indeed, a natural discharge is checked, either by torpor of the secretory organ, or restrained by spasm, they will generally afford relief. This is especially true in regard to retention of urine.

* Vid. Emmenagogues.

Not a few of the local affections are advantageously managed by blisters. As a discutient application, their power is acknowledged in buboes, in mammary swellings, in enlargements of the testicles, and in scrophulous and other indolent tumors. Of all the means which I have ever tried, they are the most successful in relieving paronychia, if resorted to in the early or forming stage of the case.

Behind the ears, they are sometimes useful in deafness, whether of an acute or chronic nature, and not less so in the painful affections of the ear, proceeding from an inflamed state of the membranous lining. On the cheek, they are confessedly one of the most effectual of our remedies in odontalgia—and I have known them to suspend the pain when put on the arm. Even a sinapism will sometimes be productive of the same effects.

As a remedy in tinea capitis, in obdurate tetter, and in many other herpetic cases of a local nature, the use of blisters is familiar to most practitioners.

Much has been said of late years in their favour by Mr. Crowther, and other surgeons, in the acute and chronic inflammations of the joints, and, from what I have seen of the practice, I cannot doubt of its great and decisive utility. To be successful, however, the discharge must be kept up, either by a repetition of the blisters, or by dressings with savin ointment.

Of the numerous improvements in surgery which have been suggested by Dr. Physick, there is scarcely

any one of more unequivocal utility, than the management, by blisters, of inflamed veins from the operation of bleeding. In most cases, a single one will prove adequate to the cure, though, occasionally, where the arm is very stiff and tumid, a succession of them is demanded. The mode of application is, to confine a strip of the plaster along the whole course of the inflamed vein, making an opening for the pus or sanies to escape.

To the cases which I have enumerated, many more might be added, in which blisters are employed. Enough, however, has been said, to serve as a guide in their application, and to illustrate the great value of them as a means of combating disease.

It remains for me to give some account of the articles used for the purpose of effecting vesication.

MELOE VESICATORIUS,

VEL

LYTTA VESICATORIA.

Of the genus *Cantharis* there are several species, but the one here introduced is most highly esteemed, and has long since supplanted all the rest in practice. As a vesicating substance, the *Mylabrum Cichorei* was employed by the ancient physicians, and, we are told, is continued, for the same purpose, by the Chinese. Cantharides are to be met with in Germany,

France, Italy, and most of the countries of Europe. Being, however, procured chiefly from Spain, they are called *Spanish flies*, though the largest and best are brought from Italy.

Cantharides are an insect of the beetle kind, having a lively tinge of blue and green, interspersed with a golden hue, appearing at stated seasons in large swarms on trees, the foliage of which they ravage and destroy. They are caught by shaking them off the trees into a cloth held underneath—and are then immersed in vinegar, or exposed to its vapour—and next dried, by being placed in the sun.

Cantharides do not lose their virtue by age, or by keeping them in powder. Even these acrid insects are soon reduced, by some others feeding on them, to dust, which, however, is found to be as active as the recent fly, since only the inert parenchymatous portion is selected as food.*†

* Of the manner of preparing a blister plaster, little need be said, so familiar to almost every one is the process. It is commonly done by spreading a piece of soft leather, or new strong linen, of the proper form and dimensions, with *basilicon ointment*, and then working into it as large a portion of the powdered flies as can be conveniently done. But, as the flies are apt to fall off, whatever care be taken in forming the plaster, it will always be prudent, and particularly if the blister is to be applied near the eye, to have it made of the epispastic ointment, the formula for which may be seen in any of the Dispensatories.

To increase the vesicating power of cantharides, various means have been suggested, the best of which is, undoubtedly, that proposed by Dr. Hartshorne, of this city, consisting of a strong decoction, made by boiling the flies with the spirit of turpentine. Dossils of lint soaked in this, and applied to any part of the body, can hardly fail, under any circumstances, to excite a blister.

† Vid. Diuretics.

CANTHARIS VITTATA,

VEL

LYTTA VITTATA.

This is an American insect, having been met with, I believe, in no other section of the world. During the autumnal months it appears, in some seasons, in prodigious numbers, covering the leaves of several different kinds of plants, which they devour, though they are found most abundantly on the potato vine, and hence are called *potato fly*.

In its general configuration and appearance, this insect bears some resemblance to cantharides. It is, however, smaller, and of a very different colour, having a mixture of red, black, and yellow, variously distributed. To Dr. Isaac Chapman, of the neighbourhood of this city, the credit is due of discovering the vesicating property of this fly. More than twenty years ago, he proved, by a series of trials, that in this respect, it is equal, if not superior to cantharides, which has since been confirmed, by many of the most distinguished practitioners in every part of the United States.

Experiments satisfactorily show, that whether used as an external application, or an internal medicine, they are productive of the same effects, with this difference

only, that our native fly is much more prompt as a vesicatory.

Exactly as in the case of cantharides, they are killed by being subjected to the vapour of vinegar, and afterwards carefully dried, so as to resist the process of putrefaction. Neither time nor pulverization impairs, in any great degree, their activity. The fine dust to which they are reduced, after a few years, by the ravages of other insects, retains all the powers of the fresh fly.

No reason, in short, exists for the preference still given to cantharides, except, perhaps, the irregularity with which practitioners are supplied with the American insect.

MELOE NIGER.

Of the medical properties of this insect I have no knowledge myself. It was originally recommended as a vesicatory by the late professor Woodhouse of our University, who considered it as not less efficacious than either of the two preceding flies, and with this superiority, that it never excites strangury. Whether this statement be correct has not been sufficiently determined. The fly does not abound with us, though in the New England states it is said to be met with in very large numbers. It is not more than half the size of the other American insect—is of a dark

black colour, and feeds chiefly on the stick weed* and potato vines.

Mineral Vesicatories.

ANTIMONIUM TARTARIZATUM.

Confined on the skin for a certain time this salt produces a peculiar species of vesicular eruption, difficult to heal, and hence, as affording a permanent irritation, is thought by some practitioners, to be singularly useful in protracted catarrhs, consumption, asthma, pertussis, angina pectoris, hepatitis, epilepsy, chorea-mania, chronic rheumatism, white swellings, and in all such cases. But my own experience, and that of the physicians of Europe, by some of whom this new remedy was much employed, while I was abroad, convince me that it has no superiority over the common blister, and I am still ignorant of the complaint in which it should be preferred. Besides, the irritation it produces is most distressingly painful. The best mode of making the application is, to dust a piece of adhesive plaster, of the proper size, with

* *Ambrosia Trifida.*

emetic tartar, leaving the margin clean, that it may more firmly adhere.*

* Since the preceding edition of this work, Dr. Jenner has printed a very interesting paper on "the influence of artificial eruptions on certain diseases," in which he strongly recommends the tartar emetic ointment, prepared according to the following formula :

℞ Antim. Tart. Subtil. pulv. ℥ij.

Ung. Cetacei. ℥ix.

Sacch. Alb. ℥j.

Hydrarg. Sulph. rub. gr. v.

m. ft. ungu.

The application of this ointment by friction produces, at first, a sense of prickling and itching, and on repetition for a day or two an eruption of watery pustules, which sometimes assume the appearance of small pox. The use of this ointment he extols in the diseases enumerated above, and cites many instances in proof of its efficacy. Without doubting any part of his statement, I am persuaded, that just as much may be accomplished by the usual vesicatories, and with less suffering. To the permanency of the irritation of emetic tartar, so greatly insisted on, as giving to it a superiority, I attach no sort of importance. My experience, on the contrary, satisfies me, that blisters permitted to heal and renewed, are far more effectual than when a single one is permanently kept open and discharging.

As a rubefacient, emetic tartar had long before been known, and was used with this view. Twenty grains of it, dissolved in two ounces of water, with one ounce of the tincture of cantharides, form the famous liniment or lotion of Struve, in hooping-cough, and is essentially the same as Roche's *Royal Embrocation*, for this disease. The region of the stomach is directed, by Struve, to be well bathed with this every night, from which, he says, the best effects may be expected.

Of Vegetable Vesicatories.

In various degrees, many plants are possessed of the property of vesication, as the euphorbium, the meze-reon, the persicaria, the ranunculus bulbosus, &c. They have, however, given way in practice to the productions of the animal kingdom, of which I have treated. It, nevertheless, appears to me, that the last of the plants mentioned is, in this view, entitled to some further notice.

RANUNCULUS BULBOSUS.

This plant, better known by the title of *crow-foot*, or *butter-cups*, is every where spread over our meadows and moist fields. It is the bruised root which is used, and most promptly and powerfully does it operate. Except in veterinary practice, I have never seen it resorted to, though it is occasionally done, as I understand, by country people, in their own complaints. Of this there is little doubt, that in the horse, it will vesicate more effectually than cantharides.

Considering its great activity, I am inclined to suspect, that we might make some beneficial application of it, though on this account alone, it should not supersede the animal vesicatories. Like all other agents

which act on the living system, epispastics are distinguished by peculiarities of action, and some of them cause impressions infinitely more salutary than others. By many means we can raise a blister, and by some in much less time, than with cantharides,—yet, there is none which precisely imitates their mode of action, or will do equal good in the cure of disease. It is probable that the ranunculus will be found to answer better as a sinapism, to arouse the system in its low or lethargic states, than for the purpose for which it has hitherto been employed.

ACIDUM NITRICUM,

OLIM

AQUA FORTIS.

Nitric acid has lately been employed for the purpose of vesication. The practice originated in India, and was first applied in the epidemic cholera, which, within the last few years, has devastated that region. Being found exceedingly successful in this disease, it was subsequently extended to a variety of other cases, where prompt *counter-irritation* is demanded. It seems particularly suited to the low states of fever,—to the comatose affections—to tetanus, and hydrophobia, as well as to mania, and other instances, where the ordinary process of blistering is resisted.

Two parts of the acid, with one of water, are directed to be spread over the part with a feather, or the surface may be rubbed with the mixture till some sharp pain is induced, when the acid is to be neutralized by a solution of salt of tartar.

The cuticle can now be easily detached, and leaves the cutis raw, which may be continued in this state by dressings with epispastic ointment, &c. It is said, that the pain of this application is not greater than that from the fly blister, and much more speedily subsides. It is particularly recommended by *quickness* of action, the effect being attained in two minutes, in this respect resembling the actual cautery.

Of Setons and Issues.

As sometimes substituted for blisters, I shall here say a few words relative to setons and issues. These operate very much like a permanent vesicatory, each occasioning an external irritation, attended by a purulent discharge, and hence are applicable to nearly the same description of cases. Yet they are not equal to a blister, and should never be employed, to the exclusion of it, except from considerations of convenience to the patient. The seton I would reject altogether,

as more painful and disagreeable than either, and not so effectual.

Generally, issues are applied in the complaints of the head and nervous system, such as vertigo, hemi-crania, habitual stupor—and in gutta serena, incipient cataract, deafness—as well as in palsy, epilepsy, chorea—and recently in tetanus. Two cures of this last disease have been made by Dr. Hartshorne of this city, by caustic issues on the back of the neck. To some of the phlegmasiæ, in a chronic state, at least, they are also thought to be well suited, and particularly to pneumonia—running into consumption,—hepatitis,—inflammation of the joints from rheumatism and other causes,—to which may be added, diseased vertebræ. The latter application seems of late to be considered as one of very doubtful efficacy, and is expressly condemned by some distinguished surgeons.

The ordinary rule is, to establish the issue as close as possible to the seat of the disease. Yet, where there is no local affection, this is not always necessary. Near the insertion of the deltoid muscle of the left arm may be selected as a proper place. An issue can be made by incision or by caustic. The former mode being adopted, a pea, or bean, or some hard substance, must be kept in the wound to promote the discharge, and to prevent cicatrization. But the latter is now preferred, and the approved mode of doing it, is previously to blister the part, and then to apply caustic to the raw surface for a few minutes. The best dressing is savin ointment.

Of Rubefacients.

As the term imports, these are such means as red-
den or inflame the skin without producing vesications,
acting very much on the principle of blisters, though
with less power and effect. It would seem to be a
law of the animal economy, that superficial inflam-
mation, in most cases, shall relieve that which is
deep seated, and it is in this way that rubefacients
are probably of service.

To many of the diseases enumerated under the
head of blisters, some one of the rubefacients is appli-
cable—and though the whole of these articles agree in
their general or leading properties, still to a certain
extent they differ, and are not so well suited to the
same description of cases. It will, therefore, perhaps,
be best to discuss the practical application of each
article separately, and, as one of the most important,
I shall commence with turpentine.

OLEUM TEREBINTHINÆ.

As a rubefacient, the oil of turpentine alone, or
mixed with olive oil, is much prescribed in rheuma-
tism, in sprains, and swellings of the joints, in the

anginose affections, as cynanche tonsillaris, and trachealis, in pleurodine, and even in some of the deeper seated inflammations. It is commonly used as a liniment. But, where a stronger impression is desirable, it is better to apply flannel soaked in it to the affected part, which excites a vesicular eruption that is more permanent in its effects.*

Though turpentine is thus irritant to the healthy skin, it constitutes one of the most lenitive and effectual applications to burns. On this point some difference of opinion continues to prevail among practitioners, owing, I suspect, to the mode in which the application is made. If, by carelessness or otherwise, the turpentine extends to the sound skin, great irritation and pain is always felt, and hence we should never use it except in the form of an unguent spread on linen, and so adjusted as merely to cover the burn.†

* The Guestionian embrocation, for rheumatism, is composed as follows :

℞ Ol. Terebinth. ℥iss.
 Ol. oliv. ℥iss.
 Acid. sulph. dilut. ℥iij.

† The ointment of Kentish, who first prescribed the article in burns, which consists of turpentine worked up with basilicon ointment, is the very best mode of using it.

OLEUM MONARDÆ PUNCTATÆ.

Of the plant which furnishes this article, I shall hereafter speak. The oil, as a rubefacient, is very active, and has been employed advantageously in chronic rheumatism, in periodical pains of the head, in deafness, in paralysis, and in the low states of disease generally.*†

PIX BURGUNDICA.

Burgundy pitch is a resinous concrete, obtained by incisions made in the trunk of a tree, the *Pinus Abies*. Spread on leather, it forms an excellent rubefacient, occasioning a slight irritation, and some exudation, though rarely amounting to a blister. Thus made, a plaster worn on the chest often does good in protracted catarrh, in pertussis, in asthma, and is sometimes not without utility in rheumatic and

* Dr. Atlee, of this city, to whom I am indebted for much of my information respecting the use of the oil, recommends the following liniment:

℞ Ol. monard. punct. ℥ss.
 Tinct. camph. ℥ii.
 Tinct. opii. ℥ii.
 M.

† Vid. Stimulants.

other painful affections, applied over the seat of the complaint. It is also an excellent preventive of catarrah.

CAMPHORA.

Dissolved in rectified spirit of wine alone, or mixed with olive oil, camphor becomes a useful rubefacient.*

AQUA AMMONIÆ.

Of the preparations of ammonia, this is chiefly employed for such purposes. Being very irritating, it is more commonly prescribed in the shape of what is called volatile liniment, which is made by uniting it with olive oil. By adding camphor to the above mixture, this liniment is, perhaps, improved.†

* The following ointment is recommended by Ferriar, as very beneficial in lumbago :

℞ Pulv. camph. ℥ii.
 Ung. basil. ℥i.
 Sapo. commun. ℥ss.
 Pulv. semin. sinap. ℥i.
 M. ft. ung.

† ℞ The celebrated liniment, called *Steer's Opodeldoc*, consists of White soap ℥i., Rectified spirit ℥viii., Camphor ℥iiis., Liquor of ammon. ℥vi., Oil of rosemary ℥ss., Oil of origanum ℥i.

Paris's Pharmacologia.

TINCTURA CANTHARIDIS.

By itself, or added to some of the preceding liniments, the tincture of Spanish flies forms one of the most active of these preparations, and is thought to be well suited to chronic swellings of the joints, from rheumatism, and other causes, as well as to the paralytic affections.

CAPSICUM ANNUUM,

VEL

PIPER INDICUM.

Cayenne pepper in powder mixed with a small portion of any ardent spirit, is, in some cases, the very best of the rubefacients. By steadily irritating the surface with it, I have often witnessed most striking effects in low states of disease—and I know nothing which affords more prompt relief in lumbago, sciatica, not to mention other forms of rheumatism, attacking suddenly and without fever. A saturated tincture of capsicum is a neater preparation, and, though less prescribed, I suspect will be found equally powerful.

In various diseases, and more especially those of the alimentary canal and head, attended with cold feet, great benefit has been experienced by constantly wearing socks dusted with Cayenne pepper.

SEMINA SINAPIS.

No article is, probably, so much used as the flower of mustard to stimulate the surface. Made into a paste with vinegar, and applied on linen to the affected part, it will sometimes speedily relieve superficial rheumatic pains. It is also used to arouse the system in the apoplectic and comatose affections, and in the ultimate stages of low fevers. The utility of sinapisms, however, in the latter cases, appears to me very questionable. They rarely produce any impression, and where they do, it is local, a weak species of erysipelatous inflammation, very apt to become gangrenous. No general excitement is raised, owing to the destruction of those sympathies, which connecting the various portions of the system, an impression made on one part is extended to the whole. As a preventive of the return of convulsions in adults or children, sinapisms should not be neglected. It is hardly necessary further to remark, that they are among the remedies in which we mostly confide, to attract and fix gout on the extremities. In these cases, they are applied to the soles of the feet, or above the ankles, and, while

they sustain the general excitement, they seem to do good on the principle of revulsion.

Now and then, from excessive action, sinapisms, if permitted to remain on too long, will so completely destroy the vitality of the part, as to occasion gangrene. It is, therefore, prudent, where they give much pain, speedily to remove them, and recur to such means as may abate inflammation. Except in very torpid conditions of the system, half an hour will be a sufficient time for the continuance of the application.

To mitigate the action of mustard, it is customary with some practitioners to mix with it an equal portion of flour: but this is proper only in the cases of children, or adults with delicacy of skin.*

ALLIUM SATIVUM.

Cataplasms of the bruised root of garlic, applied to the extremities, have been immemorially celebrated, in most of the cases in which mustard is employed. Being, however, a less active article, it is, for many purposes, certainly not so effectual, though as a poultice in paronychia, and some other deep seat-

* *Whitehead's Essence of Mustard.* This consists of oil of turpentine, camphor, and a portion of spirit of rosemary—to which is added a small quantity of the flour of mustard.

Whitehead's Essence of Mustard Pills. These consist of balsam Tolu with resin.

Paris's Pharmacologia.

ed inflammations, it is highly useful. The juice of garlic, rubbed on the spine, has been thought very useful in the second stage of hooping-cough.

To the garlic, we might add nearly all the *alliaciæ* and *silicosæ*, as having, in some degree, the same properties.

Of Caustics and Escharotics.

Caustics and escharotics are such substances as erode or dissolve the animal solids, and between which there is no essential difference, except as regards the degree of power. Two modes have been suggested, by which they produce their effects: either by excessive action, destroying the vitality of the part, and thus occasioning a slough—or by chemical agency, “causing the elements of the soft solids to enter into new combinations, whence their cohesion is subverted, and their composition changed.”

Caustics, or cauterics, for they are the same, are divided into *actual* and *potential*: the first consisting of fire itself, or a heated iron—the second, of those articles whose mode of operation has just been mentioned.

In the very infancy of our science, the actual cauterium seems to have been resorted to, and its use was for a long time continued, to destroy fungous flesh,

to burn out tumours, and to suppress hæmorrhage from divided vessels. But the introduction of the ligature, and the more general recurrence to the knife, and to escharotics, have nearly banished it from the practice of surgery, and altogether from that of medicine.* I proceed, therefore, to the other division of my subject, or the consideration of particular escharotics.

POTASSA.

The pure vegetable alkali, or potash, the *causticum commune acerrimum*, is the most powerful of its class. But by mixing it with lime, its activity is lessened, and then it is called *causticum commune mitius*.

As the applications of this caustic are chiefly surgical, it is not to be expected that I should enter into any minute details relative to its use. I shall content myself, therefore, with a very few remarks.

On account of its exceedingly deliquescent and penetrating nature, it acts more deeply than any other caustic, so that care should be taken, not to leave it on too long, and especially if its application be in the vicinity of large blood vessels.

* It is still used, I believe, by surgeons, in some of the hæmorrhages of the mouth, where the vessels are so situated as not to be managed by a ligature : and much has lately been said of its vast utility by some of the French writers, in various diseases, chiefly of the class of neuroses.

The properties which I have mentioned, render it very effectual in removing the callous edges of old and indolent ulcers, and for this reason it is not admissible in recent sores, or such as are attended with much inflammation. Its employment is now chiefly restricted, besides the case just mentioned, to the opening of abscesses, the forming of issues, and to some of the affections of the mouth and fauces—having this advantage under such circumstances, that it may be neutralized by touching it with vinegar, and its extension thereby at once arrested.

NITRAS ARGENTI,

OLIM

CAUSTICUM LUNARE.

Of all the caustics this is the one most used, and is applicable to the greatest number of purposes. Being possessed of the power of coagulating animal matter, it does not spread to any extent, and is, therefore, extremely convenient where a large eschar is to be avoided. To common ulcers it is admirably adapted, stimulating them to the formation of healthy granulations, and disposing them to cicatrization.

But I doubt its applicability to venereal chancre, or, indeed, to any sores of the genitals. Why it should operate unfavourably in such cases, I do not know—

but of the fact I am convinced, from pretty ample observation.

ALUMEN USTUM.

Burnt alum, in domestic practice, is much resorted to as an escharotic, and, perhaps, is undervalued by us. In weak and relaxed sores, I have seen it serviceable, and sometimes it answers well in the venereal chancre, and other ulcers, so frequently met with on the same parts.

ACIDUM NITRICUM.

None of the mineral acids is without caustic properties, though the nitric is preferable. The only case in which I have used it, is in the irregular, fungous, scrophulous sores. Here, as an escharotic, it is incomparably the best which I have tried. Diluted, it is often directed as a lotion, in extensive ulcers, occurring in hot weather, breeding worms, which it speedily destroys.*

* Vid. Blisters.

CUPRI SULPHAS.

The blue vitriol, in a state of saturated solution, is a useful escharotic. I have found it particularly adapted to the very early stage of chancre, and scarcely less so, when more diluted, as a lotion, to ill-conditioned sores of the genitals. It seems very promptly to change or subvert their mode of action, disposing them to take on the healing process. The powers of the remedy in these cases I learnt from my friend Dr. Washington, who had ample opportunities, from his public station, of testing its efficacy.

CUPRI SUB-ACETIS,

OLIM

ÆRUGO.

Dissolved in water, verdigris is used to cleanse foul ulcers—and a solution of it, in vinegar mixed with honey, forms the oxymel æruginis, so strongly recommended by some writers in apthæ. Blended with basilicon, it makes a stimulating ointment, useful for some purposes, as in inflamed or ulcerated tarsi, &c.

OXYDUM ARSENICA ALBUM.

As an external application, the white oxide of arsenic was, at one time, in high repute in cancerous cases. It was originally an empirical remedy, prepared as a paste, which, applied to the ulcer, speedily formed an eschar, on the removal of which, by poultices, the diseased surface was found to be changed. Of late, a different formula has been adopted, consisting of a solution of the arsenic, in the proportion of ten grains to an ounce of water, with which the sore is delicately touched by means of a pencil.

Cases are recorded of cancers having been essentially improved under this treatment, and, indeed, of cures being effected. Yet our confidence in it has certainly abated, and we are not without evidence of its inducing so much irritation, as to compel an early discontinuance of the remedy. My own experience with respect to it is exceedingly imperfect.

Mercurial Preparations.

More than one of these are escharotic, and not a little employed. The first which I shall notice is, the

HYDRARGYRI NITRICO-OXYDUM,

OLIM

HYDRARGYRUS NITRATUS RUBER.

The red precipitate is a sub-nitrate of quicksilver, and is directed either in the shape of an unguent, or in powder, sprinkled on the surface of fungous or languid sores, to erode or stimulate, as the case may be.

HYDRARGYRUM PRÆCIPITUM ALBUM,

OLIM

GALX HYDRARGYRI ALBA.

Contradistinguished from the preceding article, this is called the *white precipitate*, and is an ammoniated sub-muriate of mercury. Mixed with lard, in the

proportion of a drachm to an ounce, it forms the unguentum calcis hydrargyri albi of the Dispensatories,* which is much esteemed in the herpetic eruptions, and not less so in scabies. It is unquestionably serviceable in such cases, and is recommended by its neatness. But the formula annexed is very superior to it.†

This unguent has maintained in this city the highest reputation for more than half a century, in chronic eruptions, and particularly in tetter. It was originally contrived by one of our most distinguished practitioners—though it ultimately came to be sold as a nostrum by an unlettered woman, who carefully concealed its composition, and thereby acquired a good deal of money, and still more fame, by the many cures which she effected with it.

HYDRARGYRI OXYMURIAS.

Two or three grains of corrosive sublimate, dissolved in an ounce of water, make a useful lotion in venereal ulcers, and also in some of the local eruptions.

* Now the Ung. Hydrarg. præcipit. albi.

† ℞ Merc. precip. alb. gr. xv. Sal. nit. ℥ss. Flor. sulph. ℥i. Bene terantur, adde, Axung. ꝑorcenæ ℥ij. et fiat ung.

UNGUENTUM HYDRARGYRI NITRATIS.

Every practitioner is conversant with the virtues of citrine ointment. It is habitually prescribed in tinea capitis, in tetter, and other such cases, and forms an excellent dressing in recent sores, disposed to spread by the acridness of their discharges, as well as in old ulcers, requiring to be stimulated, or to have their fungous surfaces repressed. It is also much used in chronic inflammations of the tarsi, reduced by a mixture with lard or olive oil.

UNGUENTUM PICIS LIQUIDÆ.

Tar ointment may be used in many of the cases in which the preceding article is directed. It is serviceable in tinea capitis, tetter, and similar affections. Now and then, it succeeds in healing indolent sores, and it constitutes an excellent application to the tarsi in the state before mentioned, as well as to hæmorrhoidal tumors, after the reduction of inflammation. I have, moreover, known very obstinate gleans cured by the occasional introduction of a bougie, smeared with it, into the urethra. In the three last cases, it should be mixed with lard or any bland oil, so as to convert it into a soft liniment.

I have now enumerated all the escharotics which I think worthy of particular notice, though there still remain some which are occasionally resorted to, such as the muriate of antimony, the powder and ointment of savin, &c. Enough, however, has been said on a subject, which, urged further, would lead us into details not very important.

SECTION VII.

Diffusible Stimulants.

MY attention has hitherto been directed chiefly to the investigation of those classes of remedies, which, though locally stimulant, do, in their general effect, reduce excitement by evacuations, and are, hence, more particularly adapted to diseases of increased action. These having been disposed of, I am next to turn to the consideration of the second division of my subject, or to the history of such remedies as are calculated to meet the very opposite indications.

Let me, at this early stage of the inquiry, again repeat, that while I maintain so far the uniformity of the operation of the various agents on the living system, as that in one sense all of them are stimulant, I am still not among those, who, deluded by theory, or in the ardour of generalization, have insisted that they are endowed with the same properties, differing only in degree of force, permanency, and diffusi-

bility. Consistently with my own conviction, there are no two articles which produce precisely the same effects. The impression created varies both as to the force and nature of it, and cannot, by any variation in the dose, or manner of administration, be assimilated.

Could we, by any process, bring this about, we might truly retrench the *materia medica*, and introduce that kind of simplicity into the practice of our art, which, though sometimes projected, sound experience has always taught to be vain and illusory.

In relation to general stimulants, there is a distinction too important to be overlooked. As formerly remarked we have a set distinguished by great diffusibility, which, nearly as soon as exhibited, occasion universal excitement over the body : and a second section, by which tone is imparted, though very slowly, and only by a long continued administration. The diffusible are very transient in their effects, while such as are more gradual in their operation, produce permanent, or enduring impressions, and are called tonics.

In discussing the properties of the first class, it has been usual, of late, to arrange the articles under the two heads of narcotics and antispasmodics. But the latter term is exceedingly vague, and one to which it is not easy to attach any definite idea.

By *spasm*, we understand an irregular contraction of the muscular fibre. But this may take place under the most opposite circumstances, and is susceptible of an infinite variety of modifications.

It occurs in an extreme condition of weakness, as in many of the nervous affections, and is equally incident to a highly excited system, as is illustrated in colic, and still more strikingly in some of the diseases produced by the active poisons.

Contemplated, therefore, in one view, we should treat, under the head of antispasmodics, of all the stimulating and tonic remedies, and in another, of those that are directly evacuant and depletory. Though, we have no description of articles which can be considered as peculiarly antispasmodic, it must be confessed, that there are certain medicines, closely allied to the narcotics, marked by some distinct properties. The difference to which I allude has been explained on the supposition, that, as stimulants, they have less diffusibility, causing thereby greater permanency of impression, and, on this account, constituting an intermediate link between the narcotics and tonics. Directly the reverse of this, however, seems to be true. No articles are so diffusive or evanescent in their effects, as some of the most decided antispasmodics, as ether, opium, &c.

Concerning the *modus operandi* of narcotics, no slight difference of opinion has prevailed. Towards the close of the last century especially, the keenest controversy was maintained on the subject, between the disciples of Brown and Cullen. It is impossible for me to enter into a detail of the facts and reasonings employed by the conflicting parties, in this memorable discussion, which was infinitely more characterised

by adroitness of argument than philosophical courtesy. Nor do I deem it necessary. The decision of practitioners is pretty well made up, as to the particular circumstances of disease in which we are to resort to this assortment of medicines—and such is the species of intelligence most desirable in the practice of our profession. Yet, it may still be the wish of some, to be made acquainted with the more prominent points of difference in the views of these two great and distinguished theorists. This may be done in a very few words.

Conformably to the notions of Cullen, a narcotic is a substance, which, in its primary operation, diminishes the actions and powers of the system, without any sensible evacuation, or, in other words, is a sedative. Noxious, however, in their nature, he supposed, the conservative principle of the constitution makes an effort to correct the impression of these articles, and that the stimulant effect ascribed to them is, in reality, occasioned by the action thus induced. But, exhibited in too large a dose, the *Vis Medica-trix* is incapable of resistance, and the system becomes depressed, with the vital energies greatly impaired, or, as it may happen, entirely extinguished. Narcotics, therefore, according to him, are directly sedative, and indirectly stimulant.

His opponent, on the contrary, considered these substances as direct stimulants, surpassing all others in energy and diffusibility, and that the debility which ensues from an overdose is of an indirect kind, the

consequence of the expenditure of excitability from excessive stimulation.

Let us now trace the action of narcotics, and by doing so, perhaps, we may find that the opinions I have mentioned, however they may differ in speculation, are not wholly irreconcilable in a practical view.

Given in a moderate dose, the purer narcotics excite activity both of body and mind. The force, frequency, and fulness of the pulse are increased—muscular action is rendered more vigorous—the temperature of the surface becomes higher—some of the secretions are promoted—and hilarity and animation of spirits induced and kept up for a season. But the effects enumerated, as caused by a limited use of these articles, having continued for a short period, are succeeded by very unequivocal signs of diminished action, and subdued sensibility. The pulse becomes slower, and more full than natural—the secretions, except by the skin, are abated—there is less susceptibility to impressions—pain is alleviated, and inordinate motions repressed—muscular power is abridged, and the mind, partaking of this general languor, becomes dull and inactive. This state either terminates in, or produces a tendency to, sleep.

By a large dose, debility, without any previous excitement, takes place, or if there be excitement, it is so evanescent, as not to be perceived—leaving ultimately, as its effects, tremors, sickness, headache, and oppression.

Taken in excess, the system at once sinks under the impression, and the consequences are either wild delirium, or a heavy stupor—deep, difficult, and stertorous respiration—convulsions, apoplexy, or paralysis, and finally death.

Such would seem to be the ordinary effects of narcotics, in a moderate, large, or excessive dose, which, however, are not a little diversified by peculiarities of constitution, or the various morbid states of the system, and other circumstances, known to modify the action of all medicines. No inconsiderable diversity of effects also occur, from peculiarity of power in the different articles appertaining to this very extensive class. Digitalis and opium, ether and tobacco, camphor and nux vomica, not to cite other examples, are all included in it—though surely the analogy is very remote, both as regards their properties and practical applications.*

* In the new Italian doctrine of *counter-stimulus*, so ingeniously sustained by Rasori and Tommasini, we have a very different explanation of the *modus operandi* of the two sets of articles comprehended in the general class of narcotics. Contrary to the Brunonian hypothesis, it is alleged, that many substances produce an effect entirely opposite to that of stimulation, or, in other words, directly reduce excitement, and among those are digitalis, prussic acid, &c.

That part of the doctrine which relates to this subject, is contained in the following summary by Tommasini :

“ 1. That many substances act on the living fibre, in a manner directly opposed to that of stimulation—and that those effects which Brown attributed to a negation of stimuli, are to be ascribed to the positive action of contra-stimulants.

“ 2. That contra-stimulants have the power of subduing, even with-

Most of them being capable of producing either a stimulant, or what has been called a sedative effect, by the mode of administration, narcotics may be employed to meet very opposite indications.

To command their stimulant power, they ought to be prescribed in small doses, frequently repeated, and gradually increased, and the excitement which they raise is thus sustained. The design, however, being to mitigate pain, to procure sleep—to relieve irritation, or deaden sensibility, they should be exhibited in a full dose, and at more distant intervals.

That the purer narcotics are endowed with the power which I have assigned them, is very satisfactorily proved, as we shall hereafter see, by the operation of opium, the article which, as most commonly resorted to, is best understood.

It may be deduced from the preceding account of narcotics, that they constitute a most important class of medicines, susceptible of a very diversified application in the practice of physic. But, to render them

out any evacuation whatever, the effects of an excessive excitement—and that when they are too liberally applied, diseases are produced, which the administration of stimuli alone can relieve.

“3. That we have, in the class of contra-stimulants, a set of remedies adapted to the cure of every morbid condition resulting from excessive stimulation—and which may be used like blood-letting or purgatives.

“4. That the capability of the fibre to support large doses of contra-stimulants or of stimulants, is in proportion to the increased degree of diathesis present, whether occasioned by sthenic or asthenic powers.

“5. The discovery that this capability of supporting contra-stimulants, affords a juster measure of the intensity of the diathesis, than any that can be collected from the symptoms themselves.”

serviceable, much caution and discrimination is necessary. It ought to be remembered, that the chief indications which they are capable of fulfilling, are to excite and support the actions of the system—to assuage pain, and allay irritation—to relieve spasmodic affections—to induce sleep, and to check the morbidly increased secretions and excretions.

We have, however, a large number of articles, which, without possessing the narcotic property in any or a great degree, are more unequivocally stimulant, and which we recur to, in very many instances, with manifest effect, where excitement is to be created or sustained. These I shall treat of under the head of incitants.

Nothing, perhaps, in the exercise of our profession is more difficult, than to fix the period, in the progress of a disease, or to ascertain the circumstances, in which it becomes proper to prescribe stimulants. As relates to the use of depleting remedies, it is far more easy to come to a just decision. Not to descend to details which, probably, would not shed any very distinct light, I shall merely observe, that in making up our minds on this point, we must be guided by the state of the system.

Meaning, in the administration of stimulants, to overcome an existing action, by exciting a new and a stronger one, it is obvious that they can only be resorted to with any hope of advantage in the feeble shapes of disease, or in more violent forms reduced by previous evacuations. In determining the exact

point at which to commence the use of stimulants, we may also be aided by watching their operation. Being ill-timed, they commonly produce pain in the head, or delirious wanderings, or morbid vigilance, or stricture of the breast, or restlessness and anxiety, with a hot dry skin, parched tongue, and a quick, small, and corded pulse.

As it is of great importance that this set of articles should be correctly prescribed, I shall now endeavour to suggest some precise rules on the subject.

1. It will generally be found best to begin with small doses, though we are to recollect that the action of these medicines is more rapidly lessened by repetition, than any other, so that, in a short time, the quantity requires to be considerably augmented. Exceptions, however, exist, to the precept I have inculcated. Cases of typhous fever, and some of the neuroses especially, are marked by such a loss of susceptibility to impression, that we are called upon, even in the early stages of these disorders, to exhibit stimulants freely.

2. It is wrong to combine many of these articles in one prescription, or to use any number of them at the same time. By directing them separately, or nearly so, we economise our resources in protracted diseases, and, probably, also, make a more distinct and powerful impression. Where it is expedient to deviate from this course, we should be careful to select such articles as are calculated to co-operate to the

same end. Much is sometimes gained by harmony in the action of medicines.

3. It is advisable to change occasionally the part of the body to which we apply stimulants, as sensibility will be left in one place to a remedy, when completely exhausted in another. This is a principle of very extensive application in the practice of our profession. The excitability of the stomach being worn out, we should make an application to the bowels or skin. We have the propriety of this practice exemplified in the use of opium. Numerous are the cases, where, after it cannot be any longer given with advantage by the stomach, it will act very efficaciously if injected into the rectum.

4. In the administration of stimuli, as indeed of all medicines, we should endeavour to graduate the article to the state of excitability. This is a point of infinitely greater importance than is commonly imagined. Between certain conditions of the system and medicines there would seem to be an affinity or relation, which, when consulted, often leads to decisive advantages. It is not always that the most active article produces the greatest effects.

SECTION VIII.

Of particular Stimulants.

In arranging the diffusible stimulants I have not been a little embarrassed, differing as they do so essentially in their properties and uses. But perhaps practical convenience will be sufficiently attained by bringing them under the three heads of *incitants*, *narcotics*, and *antispasmodics*.

Incitants.

AMMONIÆ CARBONAS.*

The vast importance of this article entitles it to a much fuller notice than it has hitherto received from me.†

* In the London Pharmacopœia, this is stated as a *sub-carbonate*.

† Vid. Diaphoretics and Expectorants.

In some one state of every variety of febrile affection, this medicine has been employed, though it is in the low or typhous fevers that it is chiefly prescribed. Notwithstanding most writers seem to confide in its powers in these cases, and even strongly recommend it, the exact circumstances in which we should recur to it, have not been definitely laid down.

It was on a former occasion remarked, that in the early stage even of genuine typhus, there is generally some degree of *increased*, if not inflammatory action. During the continuance of this state, the medicine is wholly inadmissible, the treatment here consisting of emetics, purgatives, sometimes bleeding, cold applications to the surface, and subsequently of the milder diaphoretics. But in the more advanced stages of the disease, when the indications of increasing debility come on, this, either alone, or in combination with opium and wine, is, of all the remedies which I have ever tried, one of the most decidedly useful.

To every other form of continued fever, however inflammatory in the commencement, it is not less suited when the symptoms of a typhoid tendency supervene.

In the feebler shapes of intermittents it is sometimes prescribed with bark, and has been advised by itself, previously to the accession of the paroxysm, which it is said to prevent, or, if it fails to do so, moderates the force, and shortens the duration of it.

Notwithstanding its stimulant properties, it is considered highly useful in some of the phlegmasiæ. By

several of the British practitioners I saw it much employed, especially in acute rheumatism, and without any or with very little previous depletion. This mode of treating the disease will not answer among us. Everywhere in the United States, it is, in the first stages, if not a purely inflammatory affection, at least one of high action, only to be managed by very active evacuations. Even in chronic rheumatism I am not aware that I ever did more with it than by large doses of the volatile tincture of gum guaiacum, into which it enters as a constituent part. What I know indeed of the two medicines leads me to prefer the latter, as I think that the ammonia in combination displays better powers, in these cases. The guaiacum, however, proving offensive to the stomach, the alkali alone may be substituted.

Consulting some of the older writers, it will be found that this medicine has also been much extolled in the different kinds of pneumonia. Even so late as thirty or forty years ago, it was the established practice in this city, to treat pleurisy, and other acute affections of the chest, by one or two bleedings, and then with it and seneka snake root, exhibited with a view to their expectorant effects. Either these diseases have undergone an essential change of character, or such practice must have proved very destructive. No one, at least at present, would think of recurring to this medicine in cases so entirely inflammatory. Yet there are several forms of pneumonia, in which it may be used, at a very early stage, with considerable advantage.

In miasmatic districts, a species of pleurisy often prevails, which, seizing on the emaciated frames of the wretched inhabitants, is comparatively a feeble state of disease. Bleeding here, more than once, cannot be borne, and soon after the carbonate of ammonia, and other stimulants become necessary. The pneumonia of persons advanced in life, or of exceedingly delicate and debilitated constitutions, affords a second example where it may be early employed. To deplete to any extent, under such circumstances, would be fatal—and sometimes, even from the commencement, we are compelled to resort to stimulants, among which, none is so proper as the carbonate of ammonia with opium.

But though, in the primary stages of genuine pneumonia, this medicine is improper, still, towards the close of an attack, when, as sometimes happens, there is a hard cough, with deficient expectoration—a hot skin, dry tongue, more or less encrusted, a weak tremulous pulse, and occasionally flushes of fever, with a variety of other signs, denoting great prostration of strength, in small and repeated doses it will generally be productive of advantage. In this, which not unfrequently is the prelude to consumption, as well as in some of the subsequent and final stages of the latter disease, it has likewise been beneficially employed. Towards the conclusion of the case, it manifestly sustains strength, invigorates the powers of expectoration, relieves difficult breathing, and in this way, where it does not cure, palliates symptoms, and ren-

ders somewhat less painful the ultimate scenes of existence.

To the utility of the medicine in the winter epidemic of our country, and especially when it assumes the pneumonic form,* I have already had occasion to allude. It is, moreover, prescribed in asthma, pertussis, and in the hoarseness and cough consequent on ill-managed measles. Of its power in the two former diseases, I have little or no experience. As an expectorant it might be serviceable, and also, perhaps, by correcting the depraved state of the stomach, which, if it be not an exciting, certainly in some instances proves an aggravating cause. Nor is my knowledge extensive as respects the latter case. Now and then, however, I have tried it, and not entirely without effect. It is here much extolled by several respectable writers.

As a remedy in some of the complaints of the alimentary canal, the carbonate of ammonia is much used. It is said to have done good in pyrosis, which I can readily believe, though I have had no experience with it myself. Extreme debility of stomach, attended with vomiting and spasms, as in drunkards, is often alleviated by this medicine. I have also used it beneficially in cardialgia, and more so when occurring in pregnant women†. In that gastric affection, fa-

* Pneumonia typhoides.

† It may be given in a pill, or watery solution, or a few drops of the volatile spirit of ammonia in water will sometimes do perfectly well. But the neatest, and, perhaps, the most efficient preparation, is the one

miliarly denominated nervous, or sick headache, to which the valetudinary of both sexes are subjected, a dose of the carbonate of ammonia will, in some instances, afford almost instantaneous relief.

It is well known, that gout in its more feeble forms is prone to retrocede from the extremities, and either to wander irregularly about the system, or to fasten on the stomach, or some other important internal part. In attacks of the stomach, particularly, either alone, or in conjunction with opium, it constitutes one of our best means of combating the case. By imparting tone to that viscus, it expels the disease, and fixes it again in its proper situation. Gout, however, will make its approaches to the alimentary canal in the more insidious guise of periodical colics, or flatulence, cardialgia, and other symptoms of indigestion, which are all relieved by this medicine alone, or with guaiacum.

The carbonate of ammonia has acquired some repute in dysentery. Exhibited in small and repeated doses, it is said to relieve tormina and tenesmus, to correct the bloody discharges, and, by producing a considerable determination to the surface, to accomplish even more. No part of this statement has come under my own observation, though it seems not at all

annexed: ℞ Aq. ammoniæ—Magnes. calc. āā ℥i., †Aq. cinnam. ℥ii. Aq. font. ℥vi. Of this, a table-spoonful or more may be taken whenever uneasiness is felt. But, used immediately after each meal, it generally prevents the recurrence of the attacks, by neutralising the acid which is evolved in this depraved condition of the digestive process.

improbable, or inconsistent with the acknowledged effects of the medicine. My own experience with it is limited to the sinking states of ordinary dysentery, and the original typhoid forms of the disease—in either of which cases, it is one of the most important of our remedies.

Diarrhœa, connected with long protracted debility of the bowels, I have more than once removed by it, combined with opium,—and it is still more beneficial, where this state has been brought on by habits of debauchery.

Numerous as are the diseases that enter into the class of neuroses, there is not one probably in which this medicine was not once employed. It has been tried in epilepsy, chorea, hysteria, apoplexy, palsy, tetanus, and hydrophobia. Excepting one form of palsy, and as a palliative in the hysterical paroxysm, I know not that it is of much importance in any of these cases. This, however, is not the language commonly held on the subject. Of late, I find, on the continent of Europe, and especially in France, the carbonate of ammonia is exceedingly commended in apoplexy.

The writers who have made these reports, and they are of no ordinary character, aver, that recoveries frequently take place by the copious exhibition of the medicine, wholly unaided by venesection or other evacuations. Coming with such authority, it is certainly worthy of trial, though I confess I do not repose much confidence in these representations. Consider-

ing the properties of the medicine, if it do good in apoplexy, it is probably in cases induced by gastric impressions.

Of palsy there is one variety in which it is unquestionably useful. It is the offspring of rheumatism. Being long affected by this disease, the muscles lose the power of contraction, and the extremities, if they be the seat of the attack, of motion. Cases of this description have repeatedly come under my care, which so nearly resembled genuine palsy, as not easily to be discriminated, though they may be generally known by more or less of pain or uneasiness, and particularly during damp and cloudy weather. They are to be managed as rheumatism, and in the selection of remedies, I have found the more stimulating diaphoretics to answer best, and among which is the carbonate of ammonia.

Of the utility of this medicine in mania, I have little to offer from my own knowledge, though its efficacy is well attested. As a cordial stimulant, it may be serviceable in melancholia, and in the low shapes of the other form of the disease. But I cannot perceive distinctly, the indications it is calculated to meet, as mania ordinarily appears. Much more, in my opinion, is it suited to the cases brought on by drunkenness—and, under such circumstances, I have now and then afforded relief by uniting it with musk, when opium and camphor had proved unavailing. Lately, this medicine has been used in diabetes, and we have

one case, at least, reported of its success.* The intimate connection of the disease with gastric derangement, would lead us to suppose, independent of any positive evidence, that it might be useful.

Among other purposes to which the carbonate of ammonia has been applied, is the treatment of cancerous and scrofulous ulcers. It is now about thirty or forty years since Martini, an Italian writer, gave the world an account of several cases of cancer, which he declared he had cured by the internal and external use of this article. Not very long afterwards, professor Hufeland in part confirmed this statement, by proclaiming its decided efficacy in scrofulous ulcers approaching to the nature of cancer.† These reports, however, not being corroborated on further trial by other persons, the medicine lost all its reputation, and has sunk, in this respect, nearly into forgetfulness. Yet, in the phagedenic ulcer, more particularly of the penis, I have done great good with it, as a lotion, as well as in the form of fumes.

Of its use as an internal remedy, in syphilis, though, at one time, so much commended, I need not say a word, the reputation which it formerly possessed, having been entirely destroyed by the results of the experience of Mr. Pearson and others.

The same may be affirmed of it as to dropsy. Though used in the sinking states of the system, it has no power to mitigate or control the disease itself.

* By Dr. Newman of Berlin : *Phil. Med. Journal*, Vol. VII.

† They both employed the caustic alkali.

The last case in which I shall notice the powers of this article, is in the bite of venomous reptiles. On the extent of its efficacy here it is not easy to determine, as there exists not a little contradiction on the subject. By several writers of the East Indies it is asserted, that it corrects the effects of the poison of the serpents of that country, and the same account is given of it in the West Indies.

We have more than one case of its successful application in the United States, recorded by respectable practitioners,* though its utility is denied by others of not less weight of authority.† It is employed internally, in considerable doses, while the bitten part is at the same time bathed with a solution of the caustic alkali.

No opportunity has occurred to me of testing its powers in such cases, and, I confess, I have no great confidence in it. The experiments of the Abbe Fontana show, that it is useless in the bite of the viper, and I suspect that it is equally so in relation to other serpents. Yet I have employed it advantageously to allay the pain and inflammation from the sting of the bee, the wasp, and other insects. The spirit of harts-horn is, with this view, as serviceable as any other preparation of ammonia.

All the leading diseases in which this medicine is prescribed, have now been enumerated. But there is a variety of other indications not noticed, which it is

* Dr. Ramsay, &c.

† Dr. Barton, &c.

capable of fulfilling, that will not fail to occur to those engaged in the practice of physic.

It is certainly a most important article of the *materia medica*, and applicable to a large number of cases. Not long before his death, the late Dr. Kuhn, who was one of the most sagacious and discriminating practitioners of this country, told me with some emphasis of manner, that after an experience of nearly half a century, if he were called upon to say with what single remedy he had done most good, he would without hesitation name the carbonate of ammonia, aided by wine whey. With such praise, from such authority, it surely would be superfluous to press it on medical attention.

In one respect it differs from every article of the class to which it is attached, and it would seem from most other medicines. The peculiarity to which I allude is this, that the excitement it raises approaches more nearly to that of healthy action, and hence it may be recurred to earlier than stimulants generally, in the inflammatory affections, and with greater safety in mixed cases, so equivocal or obscure as to render uncertain the propriety of stimulation.

The carbonate of ammonia may be given in the shape of pill or julep, in the dose of five or ten grains, every hour or two, according to circumstances. The best form, however, is the latter, which may be made agreeably to the annexed prescription.*

* ℞ Ammon. carb. ℥ii., Gum. arab., Sacch. alb. āā ℥i., Ol. cinnamon gtt. v., Aq. font. ℥v. m. The dose, a table-spoonful.

As the effects of this medicine are exceedingly evanescent, perhaps more so than any other, except the ethereal preparations, I prefer giving it in small doses, at short intervals, to the opposite mode, and I am persuaded, that in consequence I derive advantages from it, which I should not otherwise experience.*†

CAMPHORA.

I have taken this article out of its ordinary position in the materia medica. My reason for doing so and placing it here, is, its close analogy to the preceding one in most of its medicinal qualities and uses.

Camphor, though long considered as a gum, is a peculiar principle of vegetable composition. It is con-

* I have lately met with the following notice of the use of ammonia, as an emmenagogue. M. Lavagna of Italy, proposes the injection of it into the vagina, and gives fourteen cases of amenorrhœa, in which the practice succeeded, sometimes in twenty-four hours, and, at most, in five or six days, not only to produce the discharge, but to remove the paleness, oppression, difficulty of breathing, anorexia, weakness, &c. The proportion of the article employed, was ten or twelve drops of the alkali, in two spoonfuls of milk, often repeated in the course of the day. It generally excited in the vagina, a sensation more or less painful, according to the strength of the mixture, and susceptibility of the part, though in no case, was there any troublesome or dangerous effect.—*Biblioteca Italiana*.

† *Incompatible substances*.—All acids, the fixed alkalies, and their carbonates, lime, magnesia, alum, sulphate of magnesia, acetate, submuriate, oxy-muriate of mercury, super-acetate of lead, tartarized iron, and the sulphate of iron and zinc.

tained a in small quantity in the rosemary, the sage, thyme, lavender, the starwort, the common sassafras of our country, and in a variety of other plants. But as an article of commerce it is procured exclusively from the *laurus camphora*, which grows in the forests of Japan, existing in distinct grains in the wood of the root, of the trunk, and of the branches of this tree.* It is obtained by merely scraping it out, and is subsequently purified in Europe, and at present in this country, by the process of sublimation.

Camphor is imported in large cakes, colourless and semi-transparent, and is somewhat unctuous, with an odour highly aromatic, and a taste pungent and moderately bitter.

Doubts were long entertained as to the precise medicinal properties of this substance. By most writers, at one period, it was considered as a sedative, exceedingly cooling in its effects. But how such a notion could have been adopted by any one who had ever attended to its operation, seems extraordinary, as few medicines more unequivocally display their stimulant powers. Experiments, very diversified in their character, made on plants, the inferior animals,

* It has lately been said, that the camphor imported from Sumatra is the product of the *Dryobobans Camphora*.

Camphor may be artificially formed by driving a stream of muriatic gas through oil of turpentine. This factitious product, however, is to be distinguished from native camphor in not being soluble in weak nitric acid, and, also, in not being precipitated by water from its solution in strong nitric acid.

and on the human system, demonstrate this point incontestably.

Exhibited in a *small* dose, it increases excitement, and, if pushed to a great extent, induces delirium, vertigo, convulsions, and sometimes death, resembling, in this respect, the articles with which it is usually assorted.

No medicine, perhaps, has been prescribed for a greater variety of purposes than camphor, though of late its employment is much restricted, and I think particularly so in the practice of this city. Yet it is unquestionably a valuable article, and ought not to be neglected from the caprices of medical fashion.

In every modification of febrile action, when approaching to the typhoid state, camphor has been resorted to, and with success. Combined with opium, especially, it has been considered as one of the chief remedies in the low, or what were formerly denominated putrid fevers. By some practitioners, on account of its supposed antiseptic properties, it is even preferred, in such cases, to the carbonate of ammonia. No doubt both are well adapted to meet the indications that arise in any of the typhoid forms of fever, though I confess I have succeeded best with the former. Yet, in these cases, if protracted, I have sometimes alternated the medicines, so that the system might not lose its susceptibility by too long a use of the same article—and I suspect the rule will be found salutary in practice.

In our typhoid fevers of the winter, camphor, in conjunction with ipecacuanha and opium, may be given in the advanced stages, with very great advantage. It excites perspiration, quiets nervous irritation, removes delirium, and abates the force of the disease. Nay, it seems sometimes to answer even better than the carbonate of ammonia, though the latter is an invaluable medicine under such circumstances.

Camphor has been much celebrated in the exanthematous fevers. It is directed for the twofold purpose of promoting the eruption, and restoring it to the surface, when, from any cause, it recedes. It is also exhibited in confluent small-pox, as well to promote the maturation of the pustules, as to change generally the character and condition of the disease. Connected with this subject, there is a fact, which, perhaps, has not attracted sufficient attention.

It is confidently stated by Rosentien, that if the skin be smeared over with camphorated ointment, the eruption will not appear on that part. To preserve the eyes, he advises, that a bag filled with camphor be kept before them—and to prevent the variolous sore throat, the free use of a camphorated gargle. These observations, so far as I know, have never been corroborated, though, as coming from a respectable source, they should not be disregarded.

Much has been written, at different times, on the efficacy of camphor in puerperal fever, and it is recommended by some in all the stages of this complaint, with very little discrimination or judgment.

I have, on a preceding occasion, so fully stated my own views of the nature and treatment of this case, that I, shall now only observe, that evacuations having been premised to a considerable extent, it may be prescribed to allay irritation, or sustain excitement, and, in combination with some other articles, to promote perspiration.

Even in the purely inflammatory affections, camphor was formerly prescribed, and such was the practice of Hoffman and his contemporaries, who adopted the idea to which I have alluded, of its being sedative, and highly refrigerating in its effects. Entertaining a contrary opinion relative to its properties, I must, of course, suppose, that the practice in these cases proved as mischievous, as the theory from which it was deduced is erroneous. Nevertheless, after vascular action has been considerably reduced, it will, now and then, combined with opium and ipecacuanha, or what, perhaps, is still preferable, nitre, by exciting perspiration, operate beneficially in pneumonia and rheumatism. Equal parts of camphor and nitre form, indeed, a preparation exceedingly serviceable in some of the subdued forms of the latter disease.

To all the nervous and spasmodic diseases, perhaps, without an exception, this medicine has been deemed well suited, and particularly to epilepsy. Cullen, who is very parsimonious of his commendation of the articles of the materia medica, speaks rather favourably of it in this complaint. Yet it is the

general opinion of practitioners, that its powers in epilepsy are heightened by uniting with it the preparations of copper or zinc. It is reasonable to suppose, that such a combination would prove more active than camphor alone—since the articles mentioned are among the most efficacious of the tonic or stimulant remedies, in this disease.

Nor have we less testimony to the utility of camphor in chorea. It would be easy to collect a number of cases recorded as cured by it—though it must be confessed its reputation has declined, and at present is so low, that it is very rarely employed.

Camphor was formerly much relied upon in tetanus. That it occasionally proved serviceable in this disease is abundantly affirmed. But, as in chorea, it ceased to be prescribed, except in combination with opium.

Of the treatment of hydrophobia by camphor, nothing need be said. Like every other means, it has failed to cure, or even to mitigate essentially the symptoms of this disease, leaving it among the most conspicuous of the reproaches of our art.

Notwithstanding, therefore, the very high repute in which it is or has been held, as a remedy in the neuroses, it appears, that its powers are by no means considerable. I think, indeed, that it is entitled to little or no confidence in any one of the cases of this class which I have enumerated. It is certain, that in epilepsy, the disease in which it has received most attention, though it may sometimes palliate symptoms,

it is utterly inadequate, alone, to produce any permanent impression. Yet, in some of the more irregular spasmodic affections, its utility is confessed. Thus, in dismenorrhœa, as formerly mentioned, dependent on spasm, it undoubtedly is of much service, though the cases in which perhaps it displays its best powers, are puerperal convulsions.

It is not my intention to enter either into the history, or the details of the treatment of this terrible affection. I have not seen a great many cases of it, and I believe that it is comparatively of rare occurrence in this city. In the few instances which have come under my care, I used, with much effect, *copious blood-letting*. To this remedy I resorted, not less from certain indications which seemed most urgently to call for it, than from the success attending it, which I had witnessed in the European hospitals. To be effectual, it must be freely employed. No disease, probably, in certain instances, requires a more liberal use of the lancet—and as auxiliary to the same design, topical depletion from the head should be practised. I can speak also with great confidence of the advantage of active evacuations of the bowels by cathartics and enemata.

Camphor, however, has been most strenuously recommended by professor Hamilton, of Edinburgh, whose experience is exceedingly enlarged on this subject. But to be appropriate, it should be preceded by much depletion, and is probably calculated

only to allay the nervous irritation which is generally very predominant in the disease.

In the various forms of mania, it has, for a long time, been also a favourite remedy, though the cases to which it is more particularly applicable have not been indicated with precision, or the general practice regulated by any nicety of discrimination. Being so powerfully stimulant, we of course would avoid its exhibition in those states of the disease marked by high excitement. I have frequently observed, however, after proper reduction, that, either alone, or with opium in pretty considerable doses, it had a good effect in calming the commotions of the system, and in inducing sleep.

Cases, however, exist in which we may, at once, resort to it, without any depletion. Not unfrequently we find insanity to be simply a mental affection, in which the corporeal machine does not apparently participate to any extent. It is here usually brought on by the gradual operation of grief, or by the sombre contemplations of a false religion. There is, in such cases, little or no febrile action, and the mind settles down into melancholy, or is ultimately depressed into a state of seeming insensibility.

During the twenty-four hours, some exacerbation of the symptoms takes place, and throughout an uncommon degree of morbid vigilance exists. Camphor and opium, with the alternation of the hot and cold baths, and blisters to the extremities, constitute sometimes the best mode of managing these particular cases.

In the treatment of puerperal insanity, I do not know that we are called upon, by any peculiarity in the disease, to deviate very widely from the rules which are applicable to mania generally. Yet it would seem to be more frequently attended with extreme *nervous irritation* than *inflammatory* action. In the former state, I have seen the most manifest advantage from large and repeated doses of the tincture of hop, or the camphorated emulsion, where opium unequivocally aggravated the symptoms. In the latter state, we should bleed and purge while there is increased excitement. Blisters to the head, and to the extremities, in either state, will be beneficial. They alike allay nervous irritation, or subdue inflammatory action, and thus produce calmness and ease. Applied in a proper condition of the system, or, in other words, where excitement is sufficiently reduced, blisters sometimes prove the best of our *anodynes*.

Nymphomania, which of course is always attended with more or less of mental derangement, is said to be successfully treated by camphor. This strange affection proceeds from morbid sensibility of the uterus and its appendages. Camphor, I have observed, evinces in its operation a strong affinity to this organ, and hence is useful in many of its diseases. But the cases of nymphomania which have come under my notice, were, in the beginning; connected with great fulness of system, and very high excitement of mind. The use of camphor, under such circumstances, should be preceded by copious evacua-

tions. It, moreover, is invariably associated, so far as I have seen, with amenorrhœa—and the cures, in every instance, were effected by restoring the menstrual discharge.

Without entering into any disquisition relative to the nature of that species of mania excited by the habit of intoxication, I shall remark, that the approved plan of managing it, consists in the occasional use of emetics, and in the steady exhibition of the most powerful stimuli. Even though it may seem to be forbidden by contra-indications, we ought not to depart from this course. The symptoms of vigorous and inflammatory action incident to the case are always fallacious, and the system, for the most part, very speedily sinks into a dangerous degree of debility by the slightest depletion.

Of the remedies which I have tried, combinations of camphor and opium are the most successful in this disease—and it is, indeed, not easy to conceive of any mode of practice more efficacious. My rule is to give these medicines in large doses, till the patient becomes composed, and then to sustain his strength by a generous diet, and cordial drinks. The preceding remarks refer more particularly to cases occurring with habitual drunkards, and where the constitution is shattered and broken down.*

* Under the head of emetics, I have noticed a very different mode of treatment in this case. But though it comes to us well supported, I have found the above plan so successful, that I have hitherto been unwilling to depart from it in any instance.

Every practitioner is acquainted with the use of camphor in the strangury occasioned by blisters. That it proves serviceable under such circumstances, seems too generally admitted to be doubted. Yet, I am certain that we have better means of affording relief—and it is not to be forgotten, that, given freely, it is apt to produce this very affection. This was originally pointed out by Heberden, and I have witnessed it myself in a very aggravated shape, as before observed.

Camphor may be exhibited in different forms. It is sometimes prescribed in substance, as a bolus, which is objectionable from the bulk, and as being more apt to excite nausea. It may be diffused in water by trituration, with sugar, or mucilage, or almonds. But it is necessary, in order to facilitate the process, to add a few drops of the spirit of wine. The camphorated julep of the Dispensatories is a neat preparation, though the annexed formula is, perhaps, to be preferred.* The mixture thus made is very palatable. Of late, however, the solution, or rather suspension, of camphor in milk, has nearly superseded all other preparations of the medicine in practice. It is made by simple trituration. Dissolved in seltzer water, it makes a very pleasant and cordial beverage.

The dose of camphor is from five to ten grains, to be repeated once in two, four, or six hours, according

* ℞ Camph. ℥i., Myrrh. gr. xxx., Sacch. alb. ℥ii., Aq. font. ℥iv.

to circumstances. In great emergencies, as much as two or three drachms may be given in the twenty-four hours.*†‡

OLEUM TEREBINTHINÆ.

Of the preparations of turpentine, I have repeatedly spoken.§ Distinct, however, from the uses which have been mentioned, it is appropriated, in the management of diseases, to purposes still more important.

Exhibited internally, the spirit of turpentine is one of the most active and diffusible stimulants, pervading the whole extent of the system, though directed with greater force to certain parts.

Not long after entering on the practice of my profession, I learnt, that to check the violent vomitings incident to yellow fever, small doses of this medicine had been most beneficially used by Dr. Physick, and other medical men of this city, who borrowed the remedy from him.||

* *Incompatible substances.*—It is affected by no salt with which we can combine it.

† Vid. Diaphoretics—Emmenagogues—Rubefaciens.

‡ An *odontalgic remedy* in great repute, consists of a solution of camphor in oil of turpentine, a fluid ounce of which will dissolve two drachms.

§ Vid. Enemata, diuretics, emmenagogues, anthelmintics, and rubefaciens.

|| I have been lately told by Dr. Physick, that he employed the turpentine twenty years ago, as a general remedy in yellow fevers.

Taught in some degree, by this fact, the peculiar powers of the article, I have since made a more extensive application of it, as well in that disease, as to some other cases which I conceived to bear an analogy to it.

Convinced, from actual experience, of the utter inefficacy of all the existing modes of treating this form of pestilence, an experiment was made the last season of its prevalence in Philadelphia, (1820,) of a new practice, guided by a principle very opposite to the existing notions on the subject.

Dissections, as well as the leading symptoms, had led to the suspicion, that the disease consists in a peculiar inflammation of the stomach, caused by the action of effluvia upon it. The analogy, indeed, between it and the effects of an acrid poison, in most respects, had long been confessed. Directed by these views, Dr. Hewson and myself, under whose care the hospital was placed, instituted a practice accordingly.

After moderate evacuations of the bowels, we exhibited the turpentine, in doses adapted to the emergency. Commonly a drachm was given every hour or two, sometimes alone, and at other times with carbonate of ammonia, or some essential oil, which rendered it less disagreeable to the taste, and made the stomach more retentive of it.

Of sixteen cases managed in this way, twelve recovered. Compared with what was done in the city by other modes of treatment, this success is exceedingly encouraging. It should, too, be recollected,

that most of the patients were brought into the hospital, in an advanced stage of the disease, and when much reduced by venesection and other evacuations. Unless it be applied at the commencement, or very early in an attack, the turpentine, in common with all remedies, will be, for the most part, unavailing.

The vitality of the stomach, in this fever, after ten or twelve hours, is destroyed, and, with it, all those sympathies, direct and indirect, which link the different parts together, constituting a unity of system—and by virtue of which, impressions made at any one point are diffused over the whole. In this condition of things, remedies received into the stomach, or applied to the surface, are equally inert and inoperative. Dead to every impulse, I have known, under such circumstances, boiling turpentine to be poured on the skin without creating any sensation, and a large quantity of it, and other stimuli, found, on a *post mortem* examination, in the stomach, having undergone no change whatever. Of course they had been productive of no remedial effect.

The principle on which the turpentine was employed in the early stage of this disease may be vindicated.

Elsewhere I have said, that nothing is more delusive than the doctrine of the identity of diseased actions, or of remedial agency. We cure some inflammations by reduction with the directly depleting measures, while others are overcome by counteraction, at once subverting the morbid movements which are

going on at the time, in a part, or the whole of the system.

Do we not see this in the efficacy of certain stimulating collyria in ophthalmia—of the copaiva and cubeb in gonorrhœa—of the eau medicinale in gout—of mercury in syphilis—of the capsicum in cynanche tonsillaris—of mercurial ointment in erysipelas—not to adduce other instances, which might be done by appealing to the records of the Brunonian practice, which was often successfully conducted on this principle?

Of the *counter-agency* of turpentine in scalds and burns we are aware. The stomach, in yellow fever, is in a state of inflammation, probably of a somewhat similar nature, which is overcome in the same way. This conjecture derives support from the consideration, that, in many instances, the turpentine is soothing in its effects, removing the sense of heat and irritation in the stomach, subduing the force of vascular action and general excitement, and inducing, at once, a condition altogether of more comfort and security. Nor is it to be overlooked, that, without any previous intercommunication of opinion, the turpentine was prescribed, with great advantage, nearly about the same time, in the plague at Malta,*—and is strenuously recommended as the best corrective of the inflammation of the stomach from the acrid poisons,†—two cases, in many points, approaching so

* Falconer on the Plague.

† Orfila on Poisons.

closely to yellow fever. These coincidences are very striking, and in every view deserve our most serious attention.

Notwithstanding, however, all I have said, I do not propose the turpentine as a cure of yellow fever very confidently. My experience with it is too limited to warrant such a tone, and, from what I have seen of the disease, I am pretty certain, that the more violent forms of it are wholly irremediable. It is only suggested as eminently worthy of a further and more careful trial, and, especially, since all other plans of managing the disease have proved so ineffectual.

Formerly, we were in the habit of directing turpentine in yellow fever. But it was more as a general stimulant to sustain the sinking condition of the system, or in that state of inflammation of the stomach, approaching gangrene, by the arrestation of which it was presumed to do good.

Exactly under similar circumstances of peritoneal inflammation, which partakes much of the nature of gastritis, I have for a number of years prescribed turpentine, and with unequivocal advantage. Nor do I believe it to be less suited, though my experience in this respect is narrower, to the same state in enteritis, whatever may be the cause, whether induced in the ordinary way, or associated, as it sometimes is, with dysentery. The latter disease, indeed, at that point when gangrene is menaced, is more controlled by the free exhibition of turpentine, than by any thing else with which I am conversant. It is also of great

service in cholera infantum, at a stage somewhat earlier: and in chronic diarrhœa, with such discharges as denote the mucous coat of the intestines to be chiefly affected, it is an incomparable remedy.*

As much may be expected from it in the spasmodic affections of the alimentary canal, such as flatulent colic, and sometimes it promptly relieves gout in the stomach. A favourite prescription of Dr. Dewees of this city, and with which he says he does great good, in such cases, consists of the oil of mint and of turpentine. This mixture is alleged to be particularly suited to periodical colics.

As an evacuant of the bowels, when obstinately constipated, turpentine is deserving of much attention. Cases are reported by several of the British practitioners, of its decided efficacy. It is supposed to be peculiarly adapted to those states induced by affections of the brain. Combined in the proportion of a drachm to an ounce of castor-oil, it proves, indeed, a most active purge, under all circumstances. Nor is the turpentine less useful in certain torpid conditions of the bowels, attended with depraved secretions of the mucous tissue, as indicated by the furred tongue, sour eructations, tormina, and acrid slimy stools. This fact has long been known to me, and I have acted upon in it practice, substituting the turpentine for the blue pill, and other mercurial preparations.

* I have found the common resin, in the dose of ten or fifteen grains, repeated several times a day, to answer best in diarrhœa.

In the low fevers, when other diffusible stimuli are given, much may be expected from turpentine. It was a common remedy with me in our winter epidemic, and I had, in some instances, much reason to be satisfied with its effects. More recently I have had occasion to use it, and with equal benefit, in the genuine typhous fever, which, for the first time for many years, broke out in our public institutions, and thence diffused itself, more or less, over the city.

Within the last few years, turpentine has been greatly extolled by Dr. Brenan, a practitioner of Dublin, in puerperal fever. But he resorts to it in the early stages of the complaint, exhibiting it freely, and at the same time applying cloths soaked in it to the abdomen, so as to induce superficial inflammation. The late foreign journals contain some further evidence of its success from other practitioners.

Of this practice, my theoretical notions will not allow me to approve, though I am not willing altogether to condemn it untried. The action of turpentine is very peculiar, as we have seen, and it is not absolutely absurd to suppose, that it may counteract peritoneal inflammation, which seems to have constituted the cases of puerperal fever in which it was employed.

Not the least valuable application of turpentine is to some of the forms of rheumatism, and, I think, especially in sciatica and lumbago. By several of the older writers, it was very much extolled in these cases,

and seems to have preserved its reputation unimpaired to the present day.

The use of it in hæmorrhagies is also an old practice. How far it is appropriate to hæmoptysis, menorrhagia, or hæmatemesis, I am not prepared to determine. The only case in which I have seen it prescribed, is bleeding piles—and here I suspect it is sometimes serviceable, as well to restrain the flow, as to allay irritation. In the latter respect, the power of the remedy is so manifest, that it was constantly prescribed by the late Dr. Kuhn in painfully inflamed hæmorrhoidal tumors.

Lately, much has been said in the English periodical journals of the efficacy of turpentine in epilepsy. Cases are recorded by several highly respectable practitioners,* of cures of the disease by this remedy. But they are not entitled to the credit of having first used it. Long before I had heard of these publications, it was prescribed by me in the practice of our Alms-House, and I distinctly recollect, on claiming the remedy, being told by one of my pupils, that it was greatly employed by some one of the physicians of Charleston. Whether it is of much use in epilepsy, my experience does not enable me to state positively.

This disease is sometimes excited by worms, and, in such cases, the turpentine might be useful. Nearly the same thing may be said of it in chorea, and, in

* Drs. Percival, Latham, Lithgow, &c.

short, in the whole of this tribe of affections. There is one case of idiopathic tetanus recorded which was very speedily cured by it, and, from analogy, it is recommended in convulsions generally, having their origin in irritation of the primæ viæ.

The dose of the spirit of turpentine, in all the cases which I have enumerated, is about a drachm, to be repeated, according to the nature of the disease. The best mode of giving it is alone, or with a small portion of water. By attempting to blend it with mucilage or any such vehicle, it seems in some degree to be volatilized, and is thereby rendered more pungent to the fauces, and difficult to swallow.*†

* *Dutch or Haerlem drops*, so much used in the domestic practice of this country, consist of oil of turpentine, guaiacum, spirits of nitric ether, and the oil of amber and cloves.

† To purify the oil of turpentine for medical purposes, without diminishing its efficacy, though its taste is improved, as well as that it proves less irritating to the kidneys, the following process has been lately suggested by Dr. Nimmo, of Glasgow.

“To eight parts of oil, add one part of the strongest alcohol, and let them be well agitated—in a few minutes a separation takes place—the oil, unless very impure, falls to the bottom, and, the alcohol having dissolved the impurities, floats at the top. Pour off the alcoholic portion, add an equal quantity of alcohol as before, agitate, and separate the liquids. If this be repeated three or four times, the oil becomes nearly tasteless, almost without smell, and, when a portion of it is evaporated, it leaves no residue. The oil, however, speedily undergoes alteration, and returns to its original state of greater or less impurity.”

PHOSPHORUS.

Early in the seventeenth century phosphorus was prepared by a German chemist, who kept the process a secret, till discovered by the celebrated Boyle. It is considered as an elementary substance, and is commonly procured from bones, though it is also contained in urine. Almost as soon as it was known, it was used in various diseases, especially in France. But, owing to the violence of its action, which could not easily be restrained, and the fatal effects it occasionally produced, it seems to have been universally abandoned, as, at least, an unruly and dangerous remedy.

After a considerable lapse of time, it was once more revived, and its use may be traced in England, in pretty nearly the same diseases, in which it had been previously tried on the continent. It there experienced a similar fate, and probably for the same reasons.

As a medicine, we hear nothing more of it, till about twenty years ago, when the medical journals of almost every country of Europe, by the number of communications they contained relative to it, showed that it commanded great attention. It was extensively employed in the French military hospitals in low fevers, and with a view of checking gangrene from wounds and other causes. Nearly at the

same time, the physicians of different countries seem to have been busily engaged in experimenting with it in the diseases already mentioned—and also in the whole of the nervous and spasmodic affections—to which may be added, gout and rheumatism, dropsy, amenorrhœa, impotency, uterine hæmorrhages, and, finally, in correcting the effects of the mineral poisons, as lead, arsenic, &c.

As is usual with all new remedies, much was said of the value of phosphorus in the treatment of this copious catalogue of diseases. But, whatever may have been the degree of its utility, it appears nearly balanced, by the hazardous nature of the medicine, and the positive mischief which is acknowledged occasionally to have resulted from it. Even in its moderate operation, phosphorus is described as stimulating the whole system, invigorating the circulation, augmenting animal temperature, promoting the secretions, particularly of the skin and kidneys, imparting force to the muscles, bracing the nerves, inflaming venereal desire, and arousing the mind to animation and hilarity.

Whether this representation be true or not, my own experience is too limited to determine. During my residence at Edinburgh, I made, with my friend Dr. De Roche, some experiments with it on rabbits—and we were led to conclude, that the strong excitement evidently produced in these animals, was of a painful nature—and marks of inflammation in the alimentary canal were uniformly found after death.

Contrary to what has been said, we did not perceive that the venereal appetite was at all increased by it, and, indeed, the most sensible effect was a constant and prodigious discharge of urine.

To three different individuals, I have administered phosphorus, and though with circumspection, and in the smallest doses recommended, I was very soon compelled to discontinue it, from the alarming consequences which took place. In each case, the symptoms of gastritis were induced in a greater or less degree, and in one of them to such an height as to create much solicitude as to the event.

Nevertheless, I am not quite ready to surrender an article, universally admitted to be possessed of powers of unrivalled activity, and which, perhaps, by further inquiries and better management, may be turned to an important account in combating those intractable maladies, now the opprobria of the profession.

Different forms have been adopted for the administration of phosphorus. It has been made into a pill with conserve of roses, which, however, of all modes, is the most improper, since it exists in substance, and can scarcely fail of doing mischief. To guard against its pernicious effects, it should only be exhibited in solution, and so mixed with mucilage, as to obtund its virulent qualities. Conformably to this idea, we have a formula from Professor Hufeland, here annexed.*

* Phos. urinæ, gr. ij., subigantur longa trituratione cum Mucilagine, gum : Arabici, q. s. ut fiat cum aqua fontan. unc : vi. emulsio—cui adde

Dissolved in oil, as has been done, it is so exceedingly nauseous as hardly to be retained, and I have doubts, from what I have seen, of even the safety of the prescription. A better process is to rub it down with sweet almonds, or gum arabic, and then add a portion of the spirit of nitre, or the anodyne mineral liquor, which disguises its taste and odour—making the whole into an emulsion. Many practitioners, however, prefer a saturated solution of phosphorus in sulphuric ether, which contains about eight grains to the ounce, and it seems on the whole as little objectionable as any other mode.* But it has also been proposed, to “melt it in hot water—to reduce it to a powder by constantly shaking it, till its solidity be restored—and to triturate this powder, after divesting it of humidity, with oil and sugar, or the yolk of an egg.”

But, whatever mode is selected, the fourth of a grain is the largest dose, and the whole amount should not exceed two grains in the twenty-four hours. Even in this cautious and limited dose, we have cases recorded of its having occasioned death, after an inexpressible degree of suffering, from inflammation and spasms of the stomach, &c.

Syrupe de althæa unc. i., Liquor. anodyn. miner. Hoffm. gtt. xxx., D. S. omni bihorio cochlear sumendum aut plus pro re nata.

* This has been used with advantage externally, in palsy and rheumatism.

CAPSICUM ANNUM,

VEL

PIPER INDICUM.

This species of pepper is a native of the East and West Indies, cultivated, however, in our own country, and I have seen specimens of it not inferior to the imported.

Of all the spices it is the most active, emitting, when fresh, a pungent odour, and to the taste is not less acrid.

As a condiment, the people of most warm climates are much addicted to its use, and it seems to be a general sentiment, that it does less harm than any other heating article of the same description. My experience, which, however, is not great with it, leads me to a similar conclusion—and I have even found it salutary, where the appetite and powers of digestion were feeble and defective. Many, indeed, greatly rely on it ⁱⁿ dyspepsia, and, if the cases be properly selected, there can be no doubt of its utility. To the disease, as it prevails with drunkards, or is occasioned by atonic gout, it has appeared to me to be the best adapted.

Entertaining the opinion that it is one of the diffusible stimulants, capsicum has been strongly recommended by some practitioners in the advanced

stages of typhous fever, and other low states of disease. But, I am convinced, this is a total misapplication of the article, from an incorrect estimate of its properties, and that, under such circumstances, it can be productive of little advantage.

On the stomach it operates *locally*, and in a large dose powerfully, creating strong sensations of warmth and excitement, which, however, are not much diffused, neither sensibly increasing the force of the circulation, nor promoting generally the actions of the system. The only indication which I have ever seen it capable of fulfilling, in continued fever, is to alleviate gastric distress, and, with this single view, it has been sometimes beneficially directed in yellow fever.

That it does good alone, or with the ordinary tonics in protracted intermittents, we have sufficient authority. But this does not at all militate against the preceding remarks—since, whatever makes a strong impression on the stomach, whether that impression be extended or not, will do the same—and, indeed, such is the mode of operation of all the best remedies in the disease.

It follows, from this view of its powers, that little can be expected from capsicum, except in cases where the stomach is principally concerned: and on this account, probably, it has been found useful in certain affections of the eyes—in palsy, in epilepsy, and other neuroses of gastric origin—as well as in putrid sore throat—a case in which the stomach is deeply af-

fected. This last practice is derived from the West India physicians, who highly commend it, as having the effect particularly, to detach the sloughs, while it amends generally the condition of the parts.

The common mode of exhibiting capsicum is in pill, and the proper dose is from five to ten grains, to be repeated, as the case may demand. It is also prescribed in the form of tincture and infusion, the latter of which is made by pouring boiling water on the powder. But the prescription in cynanche maligna is somewhat different. We are directed here to infuse two table-spoonfuls of the pepper, and a tea-spoonful of salt, in half a pint of boiling water, adding thereto the same quantity of warm vinegar, to be strained through a fine cloth when it becomes cold. Of this, two table-spoonfuls are to be given every half hour. The pepper is also used as a gargle, in simple infusion, in the proportion of one grain to an ounce of boiling water, or six drachms of the tincture, to eight ounces of rose tea. This gargle is well suited to arrest the progress of cynanche tonsillaris, when used in the forming stage of the disease. But the above *West India* mixture, I think, answers much better as a detergent gargle in putrid sore throat.*

* *Hymer's Cardiac Tincture.* This is an infusion of capsicum, camphor, cardamom seeds, rhubarb, aloes, and castor in proof spirit, with a little sulphuric acid.

PIPER NIGRUM.

The black pepper is the unripe fruit dried, of a tree of the East Indies. Its common uses are sufficiently known, both as a condiment and a medicine. In the latter relation, it has long been employed, pretty much for the same purposes as cloves. With the Peruvian bark and other tonics, it is united sometimes, as well in debility of the digestive organs, as in low and intermittent fevers. To the latter case particularly, it would seem sometimes to be adapted, when the stomach is feeble, and typhoid tendencies exist. I have certainly, under such circumstances, often done good with it—and the celebrated Frank, of Vienna, speaks even more favourably of its powers. The common mode is to give six or eight of the berries every two or three hours, washed down with a glass of wine. But Frank directs, that they shall be dipped in the mucilage of gum arabic, and then into powdered Colombo, as a disguise, and exhibited as pills.

CARYOPHYLLATA AROMATICI.

Cloves are the cups of the unopened flowers of a tree, the *Eugenia caryophyllata*, which grows in the Molucca Islands, of the family of myrtles. Like the two preceding articles, they have a very pungent

odour, though far more aromatic, and are warm and stimulating to the taste, and in their general effects.

Being analogous to the peppers, they are employed in nearly the same diseases, and with similar views. Combined with the Peruvian bark, I have often prescribed cloves with great advantage in cases of intermittents, connected with a cold phlegmatic condition of the system, and delicacy of stomach. A strong tea of them will sometimes promptly relieve flatulent colic: and is also very useful in diarrhœa. The tincture, in small doses, is one of the most effectual means to check nausea and vomiting, where so stimulating a remedy can be safely administered.

The powdered cloves, quilted in flannel, and wrung out of hot spirits or brandy, applied to the stomach and bowels, I have seen do great good in cholera morbus, and still more in cholera infantum. I have only to add, that the oil of cloves, introduced on cotton or lint, into the cavity of an aching tooth, frequently removes the painful affection.

PIPER CUBEBA.

This plant, a native of the island of Java, produces a berry, which has of late attracted some share of attention as a remedial agent of considerable efficacy. It formerly held a place in the materia medica, and entered into the composition of *mithridate*, *theriaca*, &c. But, as often happens with medicines, it

fell so completely into disuse, that when again brought forward, it was considered by many as a new acquisition.

It is now about five years, since an account was published in one of the British Journals of its great powers in recent gonorrhœa, and some time afterwards its use was extended to gleet and fluor albus. The Javanese, it appears, have long been acquainted with it as a remedy in the former of these complaints, and from them an English surgeon, on the Indian establishment, acquired it.*

What is its precise value I cannot say positively, from my own experience. I have employed it repeatedly in the several diseases in which it is recommended, and though, now and then, it has done good in gonorrhœa, by checking or suspending the discharge, no entire cure was accomplished. To the other cases, it has struck me as being less adapted.

Confidence, in a much greater degree, is, however, reposed in the article by some of the European practitioners, who even consider it as a specific in the diseases mentioned, and particularly gonorrhœa. Whether this difference of success be ascribable to the state in which the article is found in our shops, I cannot tell.

The cubebs are powdered for use, of which a desert-spoonful, mixed in water, is to be taken five or six times a day.

* Edinburgh Medical and Surgical Journal, for 1818.

I annex a tabular view of the comparative success of different modes of treating gonorrhœa, in which the powers of cubebs are exemplified.*

* *REPORT of Cases of Gonorrhœa in the hospital of the Castle of Edinburgh, conducted under the care of Messrs. JOHNSTON and BARTLETT, of the 88th Regiment.*

Fifty-four cases of Gonorrhœa have been discharged cured, from the 25th June to 24th December, 1817.

There were treated by injection (20 grs. of Argent. Nitr. dissolved in $\bar{3}$ i of plain boiled water) Twenty, of which

One	was discharged cured in	3 days.	Average 17 1/3 days.
One	— — —	5 Ditto.	
One	— — —	6 Ditto.	
Two	— — —	10 Ditto.	
Four	— — —	15 Ditto.	
Four	— — —	17 Ditto.	
Four	— — —	20 Ditto.	
One	— — —	25 Ditto.	
One	— — —	28 Ditto.	
One	— — —	42 Ditto.	

There were treated by rest and abstinence fifteen, of which

Three	were discharged cured in	3 Days.	Average 8 1/2.
Two	— — —	5 Ditto.	
Four	— — —	7 Ditto.	
Four	— — —	10 Ditto.	
One	— — —	18 Ditto.	
One	— — —	23 Ditto.	

There were treated by internal medicines nineteen, of which

<i>By the Piper Cubeba.</i>	<i>By Capsicum.</i>	<i>By Camphor.</i>
Two in 4 Days.	Four in 8 Days.	One in 5 Days.
Two in 5 Days.	Two in 12 Days.	One in 8 Days.
Four in 6 Days.	Two in 24 Days.	One in 14 Days.
Average 5 1/4.	13 1/4.	9 days.

ZINGIBER OFFICINALIS.

The ginger of the shops is the root of a plant belonging to both the Indies, to China, and other countries. It is cordial and stimulating to the stomach, though even more local in its effects than either of the kindred substances I have noticed.

As a carminative, it is often serviceable in colic, and is greatly prescribed in weak and dyspeptic states of the stomach, more especially from atonic gout. Not many years ago, it attracted great attention in this case, and the evidence of its efficacy was nearly as general and irresistible, as at present is that of the colchicum or eau medicinale. But its reputation was sustained only for a short time, and we now prescribe it merely as a grateful stimulus, without the least expectation of any specific or extraordinary effects from it. Ginger may be directed, either as a strong tea, or in tincture, or in powder.

To complete the history of the aromatics, all of which are more or less stimulants, I should next treat of cinnamon, nutmeg, mace, allspice, and several others, which belong to this class. But these are rather employed as spices or condiments than medicines, or, at all events, not having the power, so far as I know, of effecting so much in any case, as the articles I have noticed, I shall dismiss them without further consideration.

ALCOHOL.

This is a term of alchymical origin. It was used to signify the real essence of things, divested by sublimation of all impurities.

It is not easy to assign this, or the other articles of which it constitutes the active principle, a position altogether satisfactory. The difficulty arises principally from the striking difference in its effects taken in a small or large quantity. It is, moreover, marked by some other very peculiar properties.

Moderately used, it is unquestionably among the least equivocal examples of a purely cordial and exhilarating stimulant, whereas urged to any extent it loses this power, and produces, as certainly, dulness and stupefaction. It may hence, without much incongruity, be inserted between the incitants and narcotics. Though undoubtedly allied, in some respects, to the latter class, we are so far from prescribing it with a view to its narcotic effect, that it is even studiously avoided, and we so manage it, that simple stimulation alone may be attained. As an article of the materia medica, therefore, whatever may be its mode of operation when differently used, it can hardly be considered in any other light than as an incitant, or stimulant.

By the process of vinous fermentation it is produced, and afterwards separated from the mass in which it is contained by distillation. The first portion procured, however, is in a diluted state, and forms what are called ardent or spiritous liquors, which, being subjected to repeated distillations, become pure and concentrated.

Excepting as an external application to burns, and certain cutaneous inflammations, or to restrain hæmorrhages, in the two first of which it is excellent, pure alcohol is rarely employed as a remedy, and never perhaps at present internally. Being a solvent of most of the vegetable proximate principles, such as resin, camphor, balsam, essential oil, extract and saccharine matter, as well as of sulphur, phosphorus, the alkalies, and many of the neutral salts, it may be said to be appropriated almost exclusively to pharmaceutical purposes.

As a medicine, it is prescribed in the shape of ardent spirits, which differ only from pure defecated alcohol diluted, in retaining the flavour of the substance from which the fermented liquor was prepared.

Of the effects of ardent spirits on the system, no very minute detail can be required, so familiar must they be to the observation of every one. It may be stated generally, that, in a limited quantity, they evince, decisively, all the qualities of a potent and diffusible stimulant, both as regards the functions of the body and operations of the mind. After a while, however,

this condition of excitation gradually subsides, and is followed by a correspondent degree of languor or collapse.

By an increased quantity, the exciting effect is more speedily induced, and we have, in rapid succession, the phenomena of intoxication, commencing with exhilaration, next delirium, and finally the most beastly stupefaction. But it sometimes happens, where the quantity has been excessive, or the individual is not habituated to the impression, that death suddenly takes place, without any of the appearances of excitement.

No very great difference is discoverable in the effects of the several species of ardent spirits, though there is a considerable variety as to taste and flavour. It has been said, by those who have carefully investigated the subject, that brandy is most cordial and invigorating to the stomach—rum most heating, and apt to affect the head—and gin and whiskey the least permanent in their operation, owing to their diuretic qualities.

Of the employment of ardent spirits as a medicine, I shall say nothing. Excepting some of the cases of drunkards, I am still to learn the disease in which they should be directed in preference to wine, and no practitioner, in my opinion, is warranted in sanctioning their use where it can be procured.

It is the sacred duty of every one exercising the profession of medicine, to unite with the moralist, the

divine, the economist, in discouraging the consumption of those baneful articles, and, as the first step in the scheme of reformation, to discountenance the popular notion of their remedial efficacy.

Chained by a species of infatuation to the use of these intoxicating beverages, as fast as Prometheus to his rock, mankind have hitherto seemed equally heedless to the admonitions of the wise, and to the suggestions of their own understandings. Leaving such as wish precise information to consult some of the more formal disquisitions on the subject, which trace their pernicious effects as well on the mind as body, I shall merely remark, that so great is the extent of the mischief, in every view, that the emptying of Pandora's box was but the type of what has since happened in the diffusion of rum, brandy, gin, and whiskey, among the human species.

Compared with ardent spirits, the action of wine is infinitely less injurious in a state of health—and, as a remedy in disease, it evinces the same superiority. The effect it produces is slower and more permanent, combining also qualities, which, while they blunt the ardency of the stimulus, afford no inconsiderable portion of nutriment, by which the system is sustained and invigorated.

Ever since the practice of physic was emancipated from the authority of the Brunonian school, it is a settled principle among physicians, never to prescribe wine in any of the febrile affections, unless there is

extreme debility, or an obvious typhoid tendency. It is prudent, even under such circumstances, to commence with the more moderate stimulus of wine whey, always the proper adjunct of the carbonate of ammonia,—and when, in the more advanced stage of the case, we are forced to resort to opium, bark, musk, or the other articles constituting the treatment at this time, to bring into co-operation wine itself.

As the excitability of the system in these cases is nearly expended, a very copious exhibition of wine is generally demanded, in order to attain its beneficial effects. It is sometimes drunk in quantities so large as to be incredible, were we not acquainted with the fact which I have mentioned, of the great insusceptibility to its impression. Nevertheless, even here, we are cautiously to regulate its administration by the effects it manifests,—since, urged too far, it might induce indirect debility, and thus cause irreparable mischief.

Wine may always be considered as doing good, when it renders the pulse fuller, slower, and stronger, when it removes or lessens delirium, calms irritation, and composes to sleep. But if, on the contrary, it accelerates the pulse, flushes the countenance, increases the temperature of the skin, excites thirst, aggravates delirium or restlessness, and thus occasions an exacerbation of the disease, the evidence of its injurious tendency is no less decisive, and we should,

at once, withdraw it altogether, or reduce the quantity.

Thus carefully exhibited, wine will be found not the least important of the stimuli, at this precise conjuncture, in these diseases—being readily taken, for the most part, even when medicines are rejected—and with unrivalled effect it sustains, in many instances, the exhausted powers of life.

To the treatment of some of the cases of neuroses, wine has also been applied, and, as regards tetanus, not always without advantage. Combined with opium, we have, indeed, sufficient authority for stating, that it has occasionally cured the disease.* This is another instance, in which the sensibility of the system to remedial impressions is much impaired, and hence, to be effectual, it must be freely given. Perhaps it would be right to urge it even to intoxication, so as to overcome muscular rigidity: and to the adoption of this course we are in some degree encouraged by the great facility such a condition affords in the reduction of dislocations, and particularly of the jaw, where the difficulty proceeds from the counteraction of the muscles. There is, in fact, no state in which muscular power is more completely enfeebled or relaxed, than when the system is under the full dominion of the inebriating drinks, as is illustrated in the loss of motion, in the giving way of the different sphincters of the body,

* Cases to this purpose are recorded by Rush, Currie, and Hosack.

and, what is strikingly applicable to our purpose, in the uniformly *fallen condition of the jaw*.

Wine is often directed in various chronic cases, attended with debility, and also in the convalescence from acute diseases, to impart tone and animation. Yet the utility of the practice is exceedingly equivocal, and, unless properly controlled, may be productive of mischief.

As to the habitual use of wine, except under severe restrictions, it is a "custom more honoured in the breach than in the observance." Carried to excess, it is only less detrimental than ardent spirits, producing a great degree of physical infirmity and moral debasement.

Among the number of wines which exist, there is no little variety, as relates to strength and other qualities.* The best of them for medicinal purposes is

* Wines admit of four divisions, as follows ;

1.—SWEET WINES. These are *Malaga, Frontignac, Tokay, Malmsey*, and others of the kind. They contain a certain portion of saccharine matter, which has not been fermented, or converted into wine. They may be produced by an imperfect fermentation, by partially drying the grapes before they are pressed, or by boiling the unfermented juice.

2.—SPARKLING WINES, of which *Champagne* is an example. These contain large quantities of carbonic acid, in consequence of their being bottled at an early period. *Champagne* is *brisk* if bottled any time between the vintage and the following May. If the bottling be omitted till October, the *Champagne* is *still*. It is, however, somewhat improved in strength.

3.—DRY AND LIGHT WINES, such as *Claret, Burgundy, Hermitage* ; also the German wines, *Hock, Rhenish, Mayne, Moselle*, &c. In these the saccharine principle is completely overcome by fermentation. The

Madeira or Sherry. I mean as stimulants, in low diseases, and the first should be preferred. Now and then, however, we meet with cases where claret is more agreeable to the sick, and answers well.

As a tonic, and particularly in weakness of the bowels, port wine is usually selected, and probably on just grounds. But in dyspeptic, and other feeble states of the stomach, where wine is at all admissible, I have found the old and dry Lisbon sometimes to

spirit produced, however, is small in amount, and the wines have an acidulous character.

4.—**DRY and STRONG WINES.** *Madeira, Sherry,* and *Port* are of this kind. In all these a quantity of brandy is fretted in during the first or second fermentation. In Madeira, care is taken to free the grapes from the stalks and unsound ones, before they are committed to the press. At Xeres, in Spain, where Sherry is made, the grapes are slightly dried, and sprinkled with quicklime before they are subjected to the press. Hence Sherry is one of the least acid of wines.

The red colour and rough taste of certain wines are owing to the fermentation being conducted on the skins of the grapes, which are red. The skins of white grapes will not produce the red colour. The *bouquet*, or odour of wine, depends upon a volatile principle held in solution. This, in the sweet and half fermented wines, as in Frontignac and Muscat, is derived immediately from the grape; but in the more perfect wines, as Claret, Hermitage, &c. it bears no resemblance to the fruit, and is wholly the product of the vinous process. The nutty flavour, so well known in Sherry, Madeira, and some other wines, is produced by almonds.



Wines, especially those of the weaker kind, are subject to become sour by the acetous fermentation. This defect cannot be properly remedied, since alkalis, which neutralize the acid, communicate to the wine an unpleasant taste. Oxides of lead correct the acidity, and communicate a sweet taste, but render the wine deleterious to health. They may be suspected to be present if the wine gives a dark precipitate on the addition of some liquid sulphuret.

prove most comfortable, and ultimately to be liked by the patients themselves.*

* Mr. Brande has instituted a set of experiments for determining the relative quantity of alcohol in different wines. The following table contains the average quantity of alcohol, of the specific gravity .825, in a hundred parts by measure, of each wine :

Lissa,	25.41	Teneriffe,	19.79
Port,	22.96	Colares,	19.75
Raisin wine,	25.12	Lachryma Christi,	19.70
Marsala,	25.09	White Constantia,	19.75
Madeira,	22.27	Red Constantia,	18.92
Currant wine,	20.55	Lisbon,	18.94
Sherry,	19.17	Malaga,	18.94
Bucellas,	18.49	Tent,	13.30
Red Madeira,	20.35	White Champagne,	13.30
Cape Muschat,	18.25	Red Champagne,	11.93
Cape Madeira,	20.51	Red Hermitage,	12.32
Grape wine	18.11	Vin de Grave,	13.37
Calcavella,	18.65	Frontignac,	12.79
Vidonia,	19.25	Cote Rotie,	12.32
Alba Flora,	17.26	Gooseberry wine,	11.84
Malaga,	17.26	Tokay,	9.88
White Hermitage,	17.43	Elder wine,	9.87
Roussillon,	18.13	Orange wine,	11.26
Claret,	15.10	Cider, highest average,	9.87
Malmsey Madeira,	16.40	Cider, lowest average,	5.21
Lunel,	15.52	Perry,	7.26
Sheraaz,	15.52	Mead,	7.32
Syracuse,	15.28	Burton ale,	8.88
Sauterne,	14.22	London porter,	4.20
Burgundy,	14.57	Small beer,	1.28
Hock,	13.68	Brandy,	53.39
Hock, old, in cask,	8.88	Rum,	53.68
Nice,	14.63	Gin,	51.60
Barsac,	13.86		

SECTION IX.


Of Narcotics.


OPIUM.

OF all the articles of the materia medica, this is, perhaps, the most extensively useful, there being scarcely one morbid affection, or disordered condition of the system, in which, under certain circumstances, it is not exhibited, either alone, or in combination.

Opium is the product of the poppy, or, as it is called by Linnæus, *papaver somniferum*. This plant readily accommodates itself to the diversities of soil and climate, and hence is found growing, in various situations, in almost every country. It flourishes well in different parts of the United States—and opium of an excellent quality has been made from it in considerable quantities. Most probably, however, the poppy is a native of the south of Asia, and the neighbouring regions.

Much as the subject has excited curiosity, and ample as have been the opportunities of ascertaining the fact, it seems still to be in some degree doubtful, how opium is prepared in the eastern countries. By some writers it is said, that the whole plant is boiled, and the water afterwards evaporated. But we have reason to believe, that this is not the process by which, at least, the purer sorts are obtained.

Many parts of the plant, the leaves, stalks, and capsules, abound with a milky fluid, when near maturity, which is emitted through slight incisions made for the purpose.* Thus procured, the fluid, by exposure to the sun for several days, becomes a tenacious mass, which is then enveloped in leaves, and constitutes the opium of the shops.

This is the most satisfactory account I have met with of the preparation of the article, and it is the process which has been adopted in the manufacture of it in the United States.

Concerning the operation of opium, medical sentiment continues to be divided, though the preponderance is decidedly in favour of its stimulant properties, and with this impression it is employed. In my general speculations relative to narcotics, I had constantly in view the effects of this article as the purest specimen of this class of medicines, and, from what I have there said, may be collected my notions on this dis-

* The seeds of the poppy have little or none of the narcotic, or other properties of the plant. They are used only as an emulsion, and from their oily nature answer very well.

puted point. Every part of the statement has been amply confirmed by experiments, and will be found, I presume, conformable to the experience of most practitioners.

Leaving those who wish fuller information to consult the work itself, containing the experiments to which I have alluded, I shall be content with giving the general results.* It appears, that “ opium applied to the eye, internal membrane of the nose, urethra, or other similar sensible surfaces, or to any other part of the body, deprived of its cuticle, is first productive of pain, a sense of heat, and of inflammation, and after the cessation of which symptoms, the natural, or morbid sensibility of the part is diminished.”

Exhibited internally, in an adequate dose, opium produces the following changes in the *vital functions*.

“ The pulsations of the heart and arteries are first rendered quicker, fuller, and stronger, and afterwards slower than at the time of taking it. With the increase of frequency in the pulse, the heat of the body is generally somewhat augmented. The respiration is little affected, except a large dose has been taken, towards the conclusion of the operation of which, it becomes slow, stertorous, and laborious.”

The *natural functions* are thus disturbed. “ The appetite and digestion, from unusually large, or frequently repeated doses, are generally impaired, and vomiting often induced: the discharges from the in-

* Vid. Crumpe on Opium.

testines are diminished or suppressed, secretion and excretion are impeded in every part of the system, except the skin, the discharge from which is evidently augmented, sometimes preceded or attended with a sense of pricking or itching of the skin, terminating, now and then, in a species of miliary eruption."

The *animal functions* are affected as follows :

" The hilarity of the mind is by degrees augmented, and continues to increase, if the dose be considerable, until the delirium of intoxication is produced, which, as when resulting from spiritous liquors is attended in different constitutions with different symptoms. It is, however, more generally productive of a pleasant and joyous state of the mind than the contrary, and, in many, it occasions an increased disposition to venery. After these effects have continued for some time, they are succeeded by others of a very opposite nature : the mind becomes gradually dull and languid, the body averse to motion, little affected by customary impressions, and inclined to sleep. If the dose has been considerable, all these symptoms continue to increase, and tremors, convulsions, vertigo, stupor, insensibility, and deprivation of muscular action, appear variously complicated, and in various degrees, proportioned to the excess of the dose, and peculiarity of the constitution in the sufferer."

Enough is contained in the preceding extracts to satisfy us of the highly stimulating nature of the medicine, and it would not be difficult to extend the parallel between it and wine to a considerable extent:

It is, indeed, sufficiently attested, that it is actually used by some of the Oriental nations, for the same purposes that we seek stimulating potations. By the Turks especially, to whom our more generous beverages are prohibited by religious prejudices, we are told,* opium is employed to inspire courage or to invigorate fortitude, to soothe sorrow or dissipate misfortune, to awaken the fancy to more brilliant exertions, or to create that mild composure and serenity of feeling, which is so desirable after the cares and solitudes of an active, perplexing, and arduous scene. Like spiritous liquors among other people, it is, in short, “the support of the coward, the solace of the wretched, and the daily source of intoxication to the debauchee.” When thus habitually taken, nearly the same moral and physical debility and suffering is experienced, as from any species of inebriating liquor. But, though the analogy to a certain extent exists, there is, in several respects, a material difference in the two articles, and in no dose, nor by any mode of administration, can they be so assimilated, as to answer the same purposes.

To illustrate more distinctly the use of opium, I shall now proceed to treat of its application in those diseases in which it has been prescribed with the greatest advantage, commencing with intermitting fevers. This is no new practice. It appears, on the contrary, that it was pursued so early as the time of Galen, and

* Vid. the accounts of Russel, Chardin, De Tott, and other travellers.

continued by the Arabian physicians, some of whom bear testimony to its efficacy. Yet the powers of the medicine in these cases were not well defined, nor fully established till much more recently.

It is generally recommended to exhibit opium about an hour before the period of the anticipated paroxysm, and it is affirmed, that it prevents it altogether, or, if it should come on, that its violence is mitigated, and its duration abridged. Of the entire correctness of this statement I entertain no doubt, from the results of my own observation and experience, independently of the authority of Trotter, by whom the practice was introduced.* Even more than this may be done with the medicine. Exhibited during the cold stage, it generally produces the very best effects, and we are told, and by no less authority than Lind, that in the hot stage it is not less advantageous.

As the result of an enlarged experience, he declares, that it speedily brings about a solution of the paroxysm by inducing perspiration, which relieves the distressing affections incident to the case—that it causes a more complete intermission, and more effectually prepares the way for the bark. Cases treated in this manner, he further states, are never followed by visceral obstruction, and the ordinary consequences of it, dropsy, jaundice, &c.

* Vide *Medicini Nautica*.

Of the many, however, who have tried this practice, I know not more than one or two who have reported in its favour. It is said, as indeed seems probable, to increase the headach, to add to the heat and restlessness, and to prolong and aggravate, in every respect, the paroxysm.

Being repugnant to all my theoretical notions, relative to the properties of opium, I entered fully into the prejudices against it, and never submitted it to experiment till lately. I confess that I have been agreeably disappointed, and am now inclined to believe, from pretty ample experience, that it will be found, that, though it be injurious in the hot stage of intermittents, where the system is plethoric and inflammatory, it will prove highly beneficial under opposite circumstances.

In speculating on this subject, it is a fact which ought to be recollected, that Lind practised almost exclusively in hot climates, among a people of relaxed habits, with little or no phlogistic diathesis, and where, of course, a strong tendency to perspiration at all times exists. It is hard to discredit the statements of such a writer.

On more than one occasion I have endeavoured to inculcate the opinion, that all continued fevers, not excepting genuine typhus, are in the commencement inflammatory, or have those determinations and congestions which require depletory measures for their removal. To this state of things succeeds, however, more or less of debility and exhaustion, and to support

the system under such circumstances becomes an indication of the utmost importance, with a view to which a variety of remedies is prescribed. By the common consent of practitioners, the carbonate of ammonia and wine are preferred, the latter particularly, being a stimulant, powerful and diffusible, and at the same time durable and nutritious.

But though, as a general remedy, these may be superior to opium, certain symptoms or conditions of the system do often arise in the course of the disease, in which this medicine is indispensably necessary. What, for instance, so effectually removes low delirium, or calms inquietude and restlessness, or restrains the diarrhoea, so often an attendant on those cases, which, while it rapidly wastes the already too much impaired strength, counteracts the beneficial tendency of all our endeavours?

Next I am to inquire how far opium may be used in the phlegmasiæ. It is remarked by a late writer of some distinction, that we should never direct it where venesection is demanded, the remedies being wholly incompatible. As a general rule this is undoubtedly correct, though it has many exceptions.

No practitioner, at present, thinks of prescribing the medicine in ordinary pneumonia, without previous evacuations, and these urged to a pretty liberal extent. But the circumstances, in which we should resort to it, have been so precisely pointed out by Cullen, that I cannot do better than cite the passage.

“To me it appears,” says he, “that in the beginning of the disease, and before bleeding and blistering have produced some remission of the pain and of the difficulty of breathing, opiates have a very bad effect, by their increasing the difficulty of breathing, and other inflammatory symptoms. But in a more advanced state of the disease, when the difficulty of breathing has abated, and when the urgent symptom is a cough, proving the chief cause of the continuance of the pain, and want of sleep, opiates may be employed with great advantage and safety.”

Given alone, however, opium having a tendency, notwithstanding what is said to the contrary, in some instances, to check the excretory efforts of the bronchiæ, it is advisable so to combine it, as to do away this objection to its use, and for this purpose we have a great variety of articles, the most approved of which I have elsewhere noticed.*

Excepting catarrh, which, in the early stage, is more effectually arrested by an opiate than by any other treatment, the preceding directions will apply, with nearly equal propriety, to all the acute inflammatory affections of the chest. Novel as the remedy I have suggested in catarrh may seem, it is not without the support of experience. I have tried it many times on myself, and still oftener with my patients, so that I can hardly be deceived.

Taken on going to bed, which it should be, it soon excites a universal and equable glow over the

* Vid. Expectorants.

system, attended with little or no perspiration, and I am not aware that any advantage is gained by uniting with it a diaphoretic. It probably operates here simply as a diffusible stimulant, overcoming, by its superior powers, the feeble action of the incipient stage of the disease. Delayed till the attack is confirmed, opium becomes mischievous, and we can only hope to subdue it, if violent, by calling into requisition the depletory and antiphlogistic measures.

But though such is our practice, with respect to opium, in genuine pneumonia, we may much earlier recur to it in some of the spurious and irregular shapes of the disease. Of peripneumonia notha there are two species, which hitherto have often been confounded in the treatment—the one consisting in an oppressed state of the lungs, from accumulations of phlegm or mucus, and the other in congestion of blood, constituting an apoplectic state of these organs. The first is the catarrhus suffocativus or bronchitis of old age or of infants, and is managed by emetics, blisters, and stimulating expectorant mixtures, into which opium *enters largely*: the second, though occurring mostly in the meridian of life, proceeds from debility of the lungs, and in which, after copious depletion, both general and topical, opium at a very early period is found to be productive of advantage, by invigorating these organs, and equalizing the circulation.

Cases, however, of the latter form of peripneumonia notha are met with, where such freedom of depletion

cannot be safely adopted. Engorgement of the great viscera, and especially of the lungs, takes out of the general circulation so large a portion of blood, and which is confined so closely, that any considerable loss by venesection is very sensibly, and may be even fatally, felt. It is prudent, under such circumstances, to detract a small portion at a time, keeping the finger on the pulse to determine the effect, and, by thus cautiously proceeding, we sometimes succeed in coaxing out the half stagnant blood, and in this way re-establish a just equilibrium in the circulation. But, where venesection is altogether inadmissible, we must substitute cupping, blistering, and, with other auxiliaries, the liberal use of opium, which I have more than once seen prove of immense service in these cases, at a conjuncture the most critical and alarming.

In typhoid pneumonia, whether original, or induced by improper management of the inflammatory form of the disease, this medicine is indisputably one of the most decisively useful. On this point, no difference of opinion exists, and we may even go so far as to lay it down as a principle, that in all the varieties or stages of pneumonia, where venesection is forbidden, or is an equivocal measure, opium should be employed, uniting with it small portions of ipecacuanha and calomel, or bringing into co-operation the carbonate of ammonia, as the one, or the other, may seem preferable.

Of the use of opium in rheumatism little need be said. It is sufficiently known that this disease is divided, very properly, into acute and chronic, and the former stage being highly inflammatory, this medicine of course is wholly inadmissible. The plan of cure in these cases, which, at present, is most followed, is to push the depleting remedies, such as bleeding, both general and topical, purging, and blistering, till arterial action is considerably abated. But if, after this is done, the pains continue, attended with moderate fever, which very commonly happens, we are to endeavour to excite a profuse and long continued perspiration. To meet this indication, nothing has ever succeeded so well with me as Dover's powder. The mode of exhibiting it here, and, indeed, under all other circumstances, where we wish the full exertion of its powers, has been amply explained.*

It is worthy of remark, that opium rarely fails to aggravate acute unsubdued rheumatism. Even in the shape of Dover's powder, and where it produces perspiration too, it most generally increases the pain, and adds to the heat and restlessness. This fact is particularly entitled to attention, as patients, in the anguish of this disease, very often demand, in a clamorous manner, a dose of the medicine.

But though, while rheumatism is inflammatory, our practice with regard to opium should be regulated by the preceding cautions, there are cases in which it

* Vid. Diaphoretics.

may be employed in a much earlier stage. The state of the disease to which I refer, often succeeds the genuine acute rheumatism, after a few days continuance, though it is more commonly met with as an original affection, in women, or persons of weak and irritable habits. There is, in this case, little or no inflammatory action, though much nervous irritation. Either alone, or in conjunction with calomel and ipecacuanha, as has been recommended by some writers, opium is here unequivocally serviceable.

As to the utility of opium in gout, the opinion of medical men is not unanimous. Yet in the regular attacks of the disease in the extremities, it seems now to be sufficiently ascertained, that, so far from affording relief, it has often a tendency severely to aggravate the paroxysm. But a practice very different was recommended by the celebrated Brown, and has been pursued by his disciples. Believing the disease to arise in all its varieties from debility, it was maintained, that it should be treated with stimulants, and, among these, that none was more efficacious than opium. Need I say, that this was mere theory, which has been fully contradicted by experience? It was, indeed, the fate of Brown, to illustrate, in his own instance, the pernicious nature of his practice. To a large dose of opium, taken in a paroxysm of podagra, which brought on apoplexy, it is said that his death was owing. Yet, when the force of inflammatory action is subdued, and the bowels have been

freely evacuated, opiates may be resorted to, either to allay pain, or procure rest.

Yet, in that species of the disease called retrocedent, and especially when it attacks the stomach with spasms, no doubt is entertained as to the propriety of opiates. But so great is the degree of torpor, under such circumstances, that it is often necessary to prescribe the medicine in very large doses. Not less than fifty or a hundred drops of laudanum, and this quantity to be repeated at short intervals, will be found to answer the purpose in many instances. The effect, however, may be very much promoted by exhibiting, at the same time, some other stimulants, such as carbonate of ammonia, or ether, accompanied by the free use of strong ginger tea, or spiced wine, or hot toddy.

To mitigate pain, as well as to overcome spasm, opium is one of our chief means in nephritis calculosa, and from it the best effects are sometimes experienced. Aided by venesection and the warm bath, it will hardly ever fail to induce such a degree of relaxation of the ureters, as to remove the obstruction, and thereby afford relief. Taken by the mouth, it answers very well, though such is the irritability of the stomach commonly attendant on these cases, that it is not always retained, and we are compelled to resort to an anodyne enema, which is probably even more effectual. Exactly with the same view, and with equal success, opium is prescribed in the spasmodic or other obstructed states of the ducts of the liver,

from biliary calculi, incident to jaundice and other hepatic affections. Nor is it less serviceable in suppressions of urine, from similar causes affecting the bladder or urethra, though a combination of opium and calomel, originally recommended by Hamilton, of Lynn Regis, has been preferred under these circumstances, and perhaps would be found a good prescription in all the above cases.

In more than one of the exanthemata, this medicine is occasionally prescribed. Whatever may be the degree of irritation or restlessness, it is to be withheld so long as there is much febrile action, and relief must be sought by a strict pursuance of the whole antiphlogistic course, including active evacuations. To this general rule, I do not at present recollect a single exception, and it is pointedly applicable to small-pox, measles, erysipelas, and scarlet fever.

In a sufficiently reduced state of the system, however, or where there is a typhoid disposition, either original, or acquired in the progress of the case, opiates form a very leading part of the treatment, and conduce to the comfort of the patient, though they may not render more essential service. Besides the general indication they are calculated to meet in the whole of these cases, there are certain peculiar symptoms or affections, for which they are exhibited. Thus, in the fever which precedes the eruption of small-pox, convulsions, especially in children, frequently occur. Though, when slight, these are not to be regarded, and, indeed, are even deemed favoura-

ble, still, if violent, or if the recurrence be at short intervals, they are alarming, and should be quieted—for which purpose, the warm bath, sinapisms, and an anodyne enema, are the proper measures. To promote the maturation of the pustules, whether in the discrete or confluent cases, where the process goes on slowly or irregularly, opium is also serviceable, and especially when conjoined with bark.

Of the particular circumstances in measles, which exact the use of opium, the cough and diarrhœa are the most prominent. But so inflammatory is the common character of this disease, at least as it prevails in the United States, that we are not too early to appeal to the medicine. Direct depletion is often required to subdue the pectoral affection, and in this intention we are much assisted by the spontaneous discharges from the bowels. These, therefore, being prematurely checked, the cough and dyspnœa will be found to return, or be aggravated. But a real necessity existing for the suppression of the diarrhœa, opium, as an ingredient in the cretaceous julep, must be employed. Nor, in the management of the diarrhœa, and particularly as regards the first stage, ought we too eagerly to recur to opiates. Dependent on more or less inflammation of the bowels, I have found that it yields more effectually to moderate bleedings than to any other course.

Except as a lotion, to allay heat and irritation of the surface in erysipelas, and here a watery solution of opium is very successful, I know no particu-

lar affection, either in this disease or in scarlatina, which calls for the use of it. To sustain as well as to calm the system, in the restless, irritable states, incident to the malignant forms of these diseases, it is, however, on general principles, employed, with other articles.

In most of the hæmorrhages, opium has been not a little employed, and I suspect rather indiscriminately. Every sound practitioner will be convinced, that in the very active species, with febrile heat and excitement, it must be hurtful. Yet the force of the circulation being diminished, or in a case originally connected with feebleness of arterial action, it is highly useful. It allays irritation, removes spasmodic stricture, and subdues that mobility connected with the state of the system, which is productive of, or at least is commonly associated with, *passive* hæmorrhages.

Notwithstanding the preceding remarks, I suspect that in pulmonary hæmorrhages, particularly, we have been too much restrained by our speculative notions in the use of opium. What would be the effects of a large dose in the beginning of active hæmoptysis, I cannot determine positively from my own experience. That it has done good, however, when thus prescribed, we are not without some direct proof.

But it may be asked, is not opium a stimulant, and can it be proper to give it where there is a full and disturbed circulation? To this it may be replied, does not every surgeon, after an operation, to quiet the patient and prevent hæmorrhage, resort to

an anodyne, though a great degree of vascular action may exist at the time? In speculating on the powers of opium, we should constantly bear in mind, that they are very peculiar, and that general reasonings will not apply to this article.

Most unquestionably it is a stimulant. To this point the evidence is irrefragable. But this is so tempered by the property of assuaging pain, and doing away irritation, that in many instances its effects are different—and hence it may be safely and efficaciously employed, where, proceeding on common principles, it would be prohibited. Yet I am not prepared to vindicate the propriety of the practice which I have just stated. My knowledge of opium in the case is infinitely too narrow to allow me to do it. Whenever I have prescribed it in the early stage of hæmoptysis, great irritation of the lungs existed, attended by spasmodic cough, &c. No one, I suspect, will dispute its propriety under such circumstances, and on this footing, I am content, for the present, to let it stand. Concerning uterine hæmorrhage, the propriety of the practice is better sustained. It has been of late particularly commended by Dr. Steuart,* and I recollect was as strongly enforced by Professor Hamilton, of Edinburgh, in his lectures. The cases to which it would seem to be only suited, though it is not thus limited, are such as depend on irregular

* Med. Chirurg. Trans.

spasmodic movements of the uterus, by which the flow of blood is renewed.

Of the efficacy of opium in the profluvia, I have already said so much, that little remains for me to add. In treating of diaphoretics, I noticed its great utility in the bowel affections, and especially in dysentery, cholera, and diarrhœa. Without recapitulating my preceding observations, I must again insist on the absolute necessity of the medicine in each of these cases. It is the more important that I should do so, as regards the two former diseases, since the propriety of the practice has been controverted by some of the highest authorities in medical science. Even by Cullen the use of opium in dysentery is condemned as a "precarious remedy, and to be avoided as much as possible." Consulting my experience, I must say, that in dysentery, opium cannot be dispensed with. Deprived of its aid, I should really not know how to proceed in the treatment of the disease. Distinct from its diaphoretic property, the medicine is often required in the progress of the case, to relieve certain symptoms arising from excessive irritability of the intestines, as tormina and tenesmus, than which nothing is sometimes more painful and distressing.

Exactly as in dysentery,* cholera morbus usually proceeds from original irritation in the alimentary canal extending itself to the biliary apparatus. This will appear by adverting to the ordinary causes of the

* Vid. Diaphoretics.

disease, which may be traced to constriction of the surface from cold, or to a morbid impression made directly on the stomach or bowels by miasmata, or offensive food, or drink in excess. It would hence follow, admitting the truth of this statement, that the only indication to be consulted is the removal of the primary irritation, which might be most effectually accomplished by the liberal exhibition of opium. But it happens, that though a theory may be perfectly just, yet our practice cannot be a regular deduction from it. In some of the cases of cholera, so copious are the secretions of bile, or such the vitiated contents of the primæ viæ from other causes, that a recurrence to opium must be anticipated by evacuations, which having been done, it is then used with great advantage.

Nevertheless, cholera does sometimes occur where the treatment may be reversed, or the opiate be made to precede the evacuations. Every practitioner has seen the disease put on a shape in which an anodyne given at the commencement of the attack, will speedily check the vomiting and purging, and subdue the attending spasms.

The utility of opium in diarrhœa is so notorious, that it would be a waste of time to dwell on the subject. It may, therefore, be sufficient for me merely to remark, that the medicine in these cases is sometimes prescribed alone, though more frequently with the cretaceous or astringent articles, of which I am hereafter to deliver the history.

Directly the reverse of the preceding cases is that condition of the stomach or bowels denominated colic, the natural discharges being here interrupted by spasmodic constriction. Yet, as affections of the same parts, I may, perhaps, introduce them in this place, without any great incongruity in nosological arrangement.

Not a little was formerly said of the powers of this medicine in colica pictonum. By Riverius, Sydenham, Huxham, De Haen, and Stoll, it is strongly recommended, and especially when united with some active purgative. To be serviceable, however, the dose is required to be large, and repeated at no distant intervals. It has not been my lot to have had many cases of the disease, though the few which have come under my care were successfully managed by opium and calomel, directed for the twofold purpose of overcoming spasm and evacuating the bowels.

On the same principle have I prescribed this combination in bilious colic. Nothing can be more obstinate than the constipation in some of these cases. And from the violent vomitings which also attend, purgatives are with difficulty retained. The opium seems, therefore, a very proper addition, and I have sometimes witnessed striking effects from it, by quieting the irritation of the stomach, and removing spasm, allowing thereby the calomel to operate actively. In common flatulent cholic, every one is acquainted with the utility of this medicine, and particularly when united with any of the carminatives. The or-

dinary objections to the employment of opium in the preceding cases, that it has a tendency to bind the bowels, and still further to confine acrid and offensive matters, which require to be removed, rest entirely on mistaken views of the operation of the remedy. It is now sufficiently established, that, though in health it generally constipates, its effects are very much the reverse in such states of disease, overcoming constriction, and promoting the discharge of stercora-ceous stools.

Certain affections connected with dyspepsia require the use of opium. The stomach in this disease, owing to debility, is, in numerous instances, very liable to cramps of an exceedingly painful and alarming nature, which are more readily overcome by this than any other remedy. It is also given in pyrosis, and even Cullen reports favourably of it in this case. I have tried it repeatedly, though without any permanent advantage, however it may relieve the uneasiness of the moment. The water-brash is an extraordinary affection. To some sections of the world it is endemic, extending in a greater or less degree to the whole population. This is the case as regards Iceland, and certain parts of Norway, Sweden, and the neighbouring countries. It prevails throughout the highlands of Scotland—and our western states, I have heard, are not exempt from it.

Linnæus says it is produced in the north of Europe, by an excessive consumption of smoked meats, and to be cured by a change of diet, which is proba-

ble enough. Commonly it may be traced to a connection with a meagre and penurious mode of living, though such is not always the fact. I have often met with it, on the contrary, among the wealthy and luxurious. It depends on a vitiated action of the stomach, and may proceed from a variety of causes.

Notwithstanding the confidence once reposed in opium in the neuroses, I suspect its powers have been exceedingly overrated, and that there are few of these cases in which it has proved decidedly useful. In tetanus from wounds, though still a favourite remedy, I cannot, from what I have seen, estimate it very highly, and such, I suspect, is the general opinion of the practitioners of this country. Yet it should be recollected, that the few instances of tetanus, which are reported to have been cured by opium, were by unusually large doses. In one case especially, fifteen hundred grains of the medicine were taken in seventeen days, and in another, the still more prodigious quantity of twenty ounces of laudanum in twenty-four hours. These facts ought, perhaps, to encourage us to persevere in the use of opium in the disease, and to a much greater extent than we have hitherto commonly ventured to do. Enormous as are the doses mentioned, they are by no means incredible to those who have attended to the torpor and extreme insensibility of the system, sometimes, to the impression of medicine, in this affection.*

* We have lately been presented with some very strong evidence in favour of the opiate practice in this disease.

Of the use of opium in hydrophobia I have little to say. On a former occasion I stated as my conviction, that this disease is incurable by any one of the remedies or modes of practice hitherto employed, and this was a deliberate and well-weighed opinion, the result of much reading and research. As far as I know, there is not a solitary cure of genuine hydrophobia on record, so well authenticated as to be credited, though very many instances are to be met with of the imitative affections being relieved by various means. In relation to opium particularly, I have only to remark, that it is alleged sometimes to have mitigated the symptoms, and this is the full amount of its efficacy in such cases.

Nor, highly as this medicine has been extolled in epilepsy, can I, from my own experience, place the slightest reliance on its powers. As formerly maintained, this disease, and all the other cases appertaining to the same class, are most successfully managed by evacuations of the alimentary canal, and by venesection. Depletion of this sort will be found much more readily to subdue nervous mobility—and, to corroborate the system, after this is accomplished, the usual tonic and stimulant articles operate well.

In chorea, opium has acquired, perhaps, a less dubious reputation, many practitioners, and among them Sydenham, having borne evidence to its efficacy. Notwithstanding all that can be brought in its favour, I am disposed to think that it generally proves impotent to any permanently beneficial purpose, if not

mischievous. More than once I have known the disease, treated by opium, rendered worse, and I am not conscious that I ever witnessed the alleviation of any one symptom from its use. Nor can I say much more of it in hysteria. As a palliative of the paroxysm, it is sometimes advantageously administered, and this is all that can be reasonably expected from it.

In mania of every species, opium is freely used, though, I apprehend, with very little attention to the peculiarities of the case. Not meaning at present to enter into any inquiry relative to the pathology of the disease, or the varieties which it assumes, it will be sufficient for my purpose to state, that, so long as there is much arterial action, or general excitement, opium is not admissible. As preliminary remedies, venesection, purging, cupping, blistering, nauseating doses of emetics, and cold applications to the head, must be resorted to, and will be found more effectually to induce a state of tranquillity, the only indication which this medicine can be expected to fulfil. But, in the weaker forms of mania, or after the system has been reduced by such evacuations as have been mentioned, opiates may be administered with decisive advantage.

To the above rule there are two exceptions. The cases to which I allude, are, mania from habitual intoxication, and that form of the disease, incident to lying-in women.

Of each of these varieties, I have had an occasion

to say something, and indeed so very recently,* that I feel unwilling to retouch the subject. Content, therefore, with what I have already stated, I shall only remark, that the opiate treatment of *mania a potu*, claimed within the last few years, by several of the European writers, as a great practical improvement, has been known and generally adopted in this city, as far back as recollection or traditional reports extend.

More than one of the cases of cachexiæ are benefited by the use of opium. To alleviate the cough, or check diarrhœa, it is universally employed in pulmonary consumption. But the powers of the medicine are not limited to these two affections. The inflammatory stage of the case having passed over, I know not any better mode of treating the disease than by opiates. Even where they produce no permanent advantage, they alleviate the more troublesome symptoms, and afford the only comfort at this distressing conjuncture. But I am persuaded that they sometimes prove more than mere palliatives.

All the narcotics are in a greater or less degree useful in certain ulcerations, and especially in those of a scrofulous nature, and opium is among the very best of the class. It is hence conceivable, that in some instances of phthisis, it may promote the healing process, and this it may do as well from the property to which I have alluded, as by allaying cough, and restraining the violent action of the lungs. But, whatever may be thought of its powers in the view which

* Vid. Camphor.

I have presented, no one denies its utility in the hectic of consumption. As in intermittent fever, it is given in anticipation of the paroxysm, which in the same way it puts off, or mitigates. Even this is accomplishing a good deal, though I must repeat, as the result of a pretty considerable experience, that opium, as a general remedy in consumption, is entitled to much higher confidence than it has generally received.

Of its use in scrofula, it is not necessary for me to say much. The cases in which it becomes proper are obviously such as are marked by great irritability, both of the general system and the local affections. But more of this when I come to the history of mercury.

Towards the close of the war of the American revolution, opium attained considerable repute in the practice of the British military hospitals, as a specific in lues venerea. It was originally introduced into the treatment of the disease, by Dr. Michælis, chief physician to the Hessian forces, who gave of it in the twenty-four hours, a quantity so enormously large, that I should never imitate the practice, though we have the assurance of its perfect safety. On a further trial of the remedy, in the European hospitals, and particularly in those of London and Edinburgh, the statements in its favour were found to be fallacious, and ever since it has ceased to be prescribed as an anti-venereal measure.*

* "The result of my experiments was very unfavourable to the credit of this new remedy, and I believe, that no surgeon in this country

Yet, during a mercurial course, certain states or symptoms often arise, which can only be managed by opium, such as extreme irritability of the general system, creating insomnolency and wretchedness, or of the stomach and bowels, preventing the retention of the mercury, or defeating its action.

It is scarcely less useful in the painful phagedænic sores incident to the disease, whether of a primary or secondary nature, as a lotion in the shape of watery solution, while its internal use is continued either alone or with mercury. On its powers as a palliative in syphilitic rheumatism, and other painful affections arising out of a general contamination of the system, I need hardly insist, so universally are they acknowledged. But, perhaps, it is not so well known, that in the other form of the venereal disease, opium is deserving of some consideration. It was the practice of the late Dr. Kuhn to treat gonorrhœa exclusively by a grain of it morning and night, which plan he was led to adopt, after a trial of all the different modes of managing this troublesome affection, as, on the whole, the most successful.

It is generally admitted, that opium rather restrains than promotes the urinary secretion in health. But, as is the case with other medicines, its effects are sometimes different in disease, and hence it has occasionally been of service in dropsy. This was the im-

any longer relies on opium, as a specific against the venereal virus."—
Pearson on the Effects of various articles of the Materia Medica, in the cure of Lues Venerea.

pression of some of the earlier writers, and we are not deficient in evidence of the success of the practice. Facts to this purport, will be found in the works of Bartholine, Willis, Mead, Monro, Heberden, and Home, not to mention inferior names.

As a remedy in dropsy, except to allay irritation, I do not know much of opiates. On a former occasion* I mentioned, incidentally, that I had several times seen very striking effects in the disease from the common sweating mixture, consisting of laudanum, spirit of nitre, and antimonial wine. But it was serviceable in these instances, by an action on the kidneys, and not at all on the skin. Examples of this reversed operation are by no means uncommon, either in diaphoretics or diuretics: the articles of each of these classes, whenever disturbed in their ordinary tendencies, being very apt to be diverted into an opposite course. Much better is the reputation of opium established in diabetis. The prescription of Ferriar, into which it enters, I have given in my account of Uva Ursi. By Elliotson† and Prout‡ it has been subsequently employed, and with great advantage, the former urging it to the extent, in some instances, of a scruple twice a day.

There is a species of mortification incident to old people, described by Mr. Pott, “as begining at the extremity of one or more of the small toes, and pass-

* Vid. Diaphoretics.

† Vid. Elliotson on Prussic acid.

‡ Vid. Prout on calculous complaints.

ing on, in more or less time, to the foot, ankle, and sometimes to a part of the leg, most commonly destroying the patient, ' in which he advises the use of opium, as the only appropriate remedy.

With this I complete what I have to say of opium in the cure of disease. Many other cases in which it is given might have been added, and especially where it is used, merely to lessen irritation, relieve pain, or induce sleep. But in doing this, I should probably have incurred the charge of prolixity, without affording any very important practical illustrations relative to the medicine. Enough, surely, has been stated to serve as a direction in its further use, and to convince us, that, while susceptible of the most diversified applications, it can only prove beneficial when prescribed by an enlightened and discriminating judgment. As it may be regulated, so indeed, will it deserve to be considered, either as the "magnum Dei donum,"* or as a weapon of danger and of mischief.

To close my account of this article, it remains to make a few remarks concerning its pharmaceutical preparations.

As it comes to us, opium is a thick, dark cake, sometimes soft and adhesive, though more commonly hard and dry. When fractured, it is of a brown colour, having a strong fœtid odour, and a nauseous taste.

* Mead.

Different menstrua operate on opium as solvents. Its resin is dissolved by alcohol, or proof spirit, making a tincture, commonly called laudanum, which retains its virtues. The gum is dissolved by water, forming, as it is termed, the aqueous solution, which is generally considered as not so active, though there is some difference of opinion on this point. Wines also afford a solution, which, however, is thought objectionable, as it becomes sour by keeping. The solutions by the vegetable acids have hitherto been represented as comparatively feeble, though it now appears without sufficient foundation.

Of opium and such preparations of it as are chiefly used, I must say a few words more in detail. Except that it is rather slower in its operation, I am not aware of any objection to it in substance. Certainly it is not so apt to be rejected where the stomach is irritable, and especially if the pill has been *prepared for some time*. It is said also to answer better in the affections of the alimentary canal, as colic, diarrhœa, &c. The average dose of opium is about one grain.

Laudanum, formerly called Thebaic tincture, from opium having been originally procured from Thebes, is given in all the cases to which the article in substance is applicable, and is more commonly prescribed. The dose for an adult is about twenty-five drops, for a child at the period of birth half a drop.

Of the Elixir Paregoric, there are two kinds kept in the shops, the one an ammoniated,* and the other

* Tinctura opii ammoniata. Pharm. Ed.

a camphorated tincture of opium.* These are of different degrees of strength, the first containing a grain of opium to the drachm, while the second has only this quantity in half an ounce. The camphorated tincture is a much less unpleasant preparation, and is usually preferred. It is supposed to be well suited to catarrhal and other pectoral affections, occurring in aged people, and the dose is about one drachm, which, however, though it contains little more than six drops of laudanum, is rendered more powerful, I think, by some other ingredients which enter into its composition.

To the above officinal preparations may be added another, which, under the denomination of *Black Drop*, has long been vended as a nostrum in this city, and is now much employed here, and in Europe. Of the two formulæ annexed,† the second is commonly adopted, and the tincture thus made has nearly twice the strength of laudanum. This prepara-

* Tinctura camphoræ composita. Pharm. Lon.

† Take of opium, four ounces, sharp vinegar or lemon juice, four pints. Digest three weeks, and then add saffron, cloves, nutmeg, and cinnamon, of each an ounce, coarsely powdered. Continue the digestion a week longer, strain through flannel, and evaporate the liquor, till reduced to the state of syrup.

2. Take half a pound of opium sliced, three pints of good verjuice, and one and a half ounce of nutmegs, and half an ounce of saffron. Boil them to a proper thickness, and then add a half pound of sugar, and two spoonfuls of yeast. Set the whole in a warm place near the fire for six or eight weeks, then place it in the open air, till it becomes a syrup. Lastly, decant, filter, and bottle it up, adding a little sugar to each bottle.

tion is one of very great value, and unquestionably deserves a place in our pharmacopœiæ. It is distinguished by the property of being well received by the stomach, and, while it produces the anodyne effect in the fullest extent, is not so apt to leave behind it any distressing consequences, such as sickness, headache, nervous tremors, &c.

Most probably this superiority is owing to the acid menstruum employed. It is an interesting fact, which lends much support to this conjecture, that laudanum, in a small portion of vinegar, operates much more kindly. This is indeed so true, that I have known several persons, who were utterly precluded from the use of opiates in the ordinary forms, take this acetous mixture with great comfort and advantage.*

Ten or fifteen years ago, M. Derosne, of Paris, announced the discovery of a certain principle in opium, in which, he alleged, the whole of its narcotic properties reside. By the more recent experiments of M. Sertuerner, another French chemist, it is ascertained, that this principle consists of an alkaline base, termed morphia, united, however, with the meconic acid, an acid peculiar to opium, forming a neutral

* In the following preparation of opium, we are told the taste and smell of the medicine are completely concealed, and that it leaves no unpleasant effects in the stomach or head.

℞ Extr. glycirrh.
 — opii āā ʒss.
 Potass. carb. ʒj.
 Aqua. ℥iij.

salt, the meconiate of morphia. This salt is exceedingly active, though the pure morphia is still more so. Exhibited in only half a grain, the latter is represented as producing the effects of the largest dose of opium. The meconic acid has little or no activity.

The whole to be boiled to one pint, the clear liquor to be poured off and evaporated to twelve ounces—then add spirit of pimento five ounces, and half a drachm of finely powdered cochineal.

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There is another preparation of opium lately introduced by Dr. Porter, of Bristol, England, which is highly commended. It is entitled liquor morphii citratis. The following is his formula :

℞ Opii crudi optimi. ℥iv.

Acidi citrici, cryst. ℥ij.

Semel in mortario lapideo contunde, dein aquæ distillatæ brilliantis Oj affunde—et intime misceantur—macera per horas viginti quatuor—per chartam bibulosam cola.

In commenting on the above preparation, Dr. Paris observes, “I have lately submitted it to the test of experience, and it certainly possesses the merit of a powerful anodyne, operating with less disturbance than the more ordinary forms of opium. I also take this opportunity of stating, that the *pyroligneous acid* was used as a menstruum, and the effect was similar to that of Dr. Porter.”

LIQUOR OPII SEDATIVUS.

By this title a preparation of opium is made and vended by Mr. Battley, a well known apothecary of London. The exact composition or formula is not revealed. We are told generally, that it is “the *sedative property of opium*, separated or divided from every other property of opium, so far as I have succeeded in effecting such division or separation, *diffused in distilled water.*”

“It has,” continues he, “been ascertained by extensive experience, in one of the largest fields of observation and proof, that it is superior to the vin. opii, and other preparations of opium, in affections of the eye requiring the use of opium—and in the last stage of cancerous

Cases, however, occur, in which insuperable difficulties exist to the administration of opium by the mouth, and, under such circumstances, we resort to anodyne enemata, the mode of making which has already been described.* But this is a troublesome process, which is often pertinaciously resisted, or, owing to irritability of the rectum, the defects of the machine, or clumsiness of the operator, cannot be accomplished. As a substitute in such instances, I have often directed a suppository of opium, and derived from it, in the fullest degree, the desired effect. To put a pill of opium into the rectum is so perfectly easy, that it may be done without the patient even knowing it—and it proves so little offensive to the bowels, that no effort is made to expel it, and consequently it is almost always retained.

By some practitioners, great confidence is reposed in the external application of opium, and also in laudanum, as an embrocation. But the practice is alto-

tumours, after the skin grows dry, and the fungous appearance takes place, the power of this medicine in allaying pain and mitigating suffering, would alone render it an object of professional and public interest.

It is conjectured by Dr. Paris, that this preparation owes its efficacy to the *acetate of morphea*. He says, that, by being kept only a short time, it undergoes certain changes, which are an insuperable objection to its admission into practice. To this, it is replied by the inventor, that the addition of a *sixteenth part of spirit* prevents such changes for months, which, however, he rather inconsistently admits, would render it unfit for the very purposes, for which he previously extols it.

* Vid. Enemata.

gether delusive, and deserves no attention. Let it be managed as it may, opium applied to the surface, in any form, produces no constitutional impression. On this point I do not speak lightly. I have seen, independently of my general experience, a plaster on which an ounce of soft opium was spread, worn by a child, for many hours, without any perceptible effect on the circulation or other functions. Yet, as a mere local remedy to assuage pain, I have no doubt of the efficacy of such applications, and there is even reason to suspect, that opium placed near the nostrils, so that its fumes may be inhaled, will, by its action on the olfactory nerves, affect the system generally.

In dismissing this subject, I shall once more remark, that, using opium by the rectum, it is necessary to treble the dose, and that, however administered, the susceptibility to its impression is speedily wasted, so that we are called upon to augment the quantity considerably.* The quantity of this medicine which has sometimes been taken, where the habit is confirmed by long continuance, would be incredible, were not the fact attested by indisputable authority. I knew myself, a wine-glassful of laudanum to be given several times in the twenty-four hours, for many months in succession, to alleviate pain from the passage of biliary calculi, and the pa-

* It is stated by Orfila, that "the effects of opium are in general more decided when administered by the rectum, than by the stomach," in the relative dose, an opinion very questionable, in the main, though in some instances true.

tient finally recovered, without suffering from this excessive use of the article. But, what is still more extraordinary, in a case of cancer of the uterus, which was under the care of two highly respectable physicians of this city, Dr. Monges and the late Dr. La Roche, the quantity was gradually increased to three pints of laudanum, besides a considerable portion of opium, in the same period.*

LACTUCARIUM.

This is the title lately given to a species of opium, or, rather, to a substance having the leading properties of opium, which is procured by inspissating the milky juice of the common garden lettuce.

It has long been suspected, that all the lactescent plants have more or less of the narcotic principle, and, as regards lettuce, the point was well ascertained even in the earliest times. Among the fables of antiquity, we read of Venus, after the death of Adonis, throwing herself on a bed of lettuces, to lull her grief, and repress her lewd desires. Allusions to its anodyne qualities frequently occur in the medical

* *Incompatible substances.*—Oxymuriate of mercury—acetate of lead—alkalies—infusions of galls and of yellow cinchona. We are told by Orfila, that the *decoction* of coffee is less energetic, as an antidote, than the *infusion*. “In combination with the vegetable acids,” Dr. Paris says, “the narcotic powers of opium are increased, in consequence of the formation of soluble salts with morphia. When the opium, however, has passed out of the *primæ viæ*, vinegar and acids are then the best remedies for counteracting its effects.”

writings of antiquity : and we are expressly told that Galen, in the decline of life, suffering much from a morbid vigilance, had recourse to the eating of lettuce in the evening, which he found “ a sovereign remedy.”

Most of the older treatises on the *Materia Medica* contain similar notices in relation to the plant, though I cannot discover that it was subjected to any pharmaceutical process, or incorporated with the regular remedies.

This was, for the first time, done by Professor Coxe, of this University, who, more than twenty-five years ago, very elaborately investigated the subject, and showed, by a series of experiments, that there is no essential difference between opium and the lactucarium, as regards their medical effects, sensible qualities, or chemical composition.*

Much later, the same inquiry was prosecuted by the elder Duncan, of Edinburgh,—and, without, probably, having any knowledge of what had been previously done, he was conducted to results strikingly similar and confirmatory. As a medicine, he pretends not to any very great experience with the article, though he tells us, that he “ has seen manifest good effects from it, in allaying muscular action, alleviating pain, and inducing sleep, the three great qualities of opium.”

* Vid. Transactions of the Philosophical Society of Philadelphia, for the year 1797.

But the information afforded us by Dr. Coxe, is more exact, who, indeed, seems to have used, or caused the medicine to be used, pretty extensively: and we learn, that in spasms of the alimentary canal, in diarrhœa, in cough, and in some other affections, its operation was precisely the same as opium. It follows, therefore, that, as a cheap substitute for that medicine, it is worthy of attention, and might be manufactured in any part of the United States, without much trouble or expense. Perhaps it may also have some peculiar properties, which might adapt it to cases, where, from certain idiosyncrasies, none of the preparations of opium can be used. The preparation, dose, and mode of administration, of the two articles, are the same.

TELA ARANEI.

It is an old, and a very general notion, among the vulgar of most countries, that the spider's web, or the spider itself, is possessed of the powers of curing ague and fever, and it is actually employed with this view. But, till lately, both have been rejected in regular practice, and their curative effect in disease, if admitted at all, was imputed entirely to the strong sensations excited by so disgusting a remedy.

At his last visit to this city, some years ago, I was informed by Dr. Robert Jackson, of the British army, that, having largely experimented with the web, he

had much reason to suppose that popular confidence in it was well founded. As a remedy in intermittents, he said, its powers were indisputably ascertained, and that as an anodyne to allay pain, or calm irritation, it proved vastly superior even to opiates.

By one of my pupils,* in whom I could place reliance, the subject was, at my request, not long afterwards, investigated—and by trial, on himself as well as on others, he substantially confirmed the preceding statement. But, in a very late work by Dr. Jackson, on fevers, I find a detailed account of his experience with the article, which is so exceedingly interesting, that I cannot forbear to extract it.†

* Dr. Broughton, of South Carolina, who made it the subject of his Inaugural Thesis.

† “I think I may venture to say, that it prevents the recurrence of febrile paroxysms more abruptly, and more effectually than bark or arsenic, or any other remedy employed for that purpose with which I am acquainted: that, like all other remedies of the kind, it is only effectual as applied under a certain condition of habit; but that the condition of susceptibility for cob-web is, at the same time, of more latitude than for any other of the known remedies. The cob-web was rarely given before the subject was prepared by bleeding, emetics, or purgatives; and, given to a subject so prepared, it seldom failed to effect a cure comparatively permanent; relapse, or conversion into another form of disease, being, upon the whole, a rare occurrence where the disease had been suspended by this remedy. If the cob-web was given in the time of perfect intermission, the return of the paroxysm was prevented; if given under the first symptoms of a commencing paroxysm, the symptoms were suppressed, and the course of the paroxysm was so much interrupted, that the disease for the most part lost its characteristic symptoms. If it was not given until the paroxysm was advanced in progress, the symptoms of irritation, viz. tremors, startings, spasms, and delirium—if such existed as forms of febrile action, were usually re-

The spider's web has been, for some time past, pretty liberally prescribed by myself and several of

duced in violence, sometimes entirely removed. In this case, sleep—calm and refreshing, usually followed the sudden and perfect removal of pain and irritation. Vomiting, spasms, and twisting in the bowels, appearing as modes of febrile irritation, were also usually allayed by it : there was no effect from it where the vomiting or pain was connected with real inflammation or progress to disorganization. In cases of febrile depression, deficient animation, and indifference to surrounding objects, the exhibition of eight or ten grains of cob-web was often followed by exhilaration ;—the eye sparkled ; the countenance assumed a temporary animation ; and, though the course of the disease might not be changed, or the dangers averted, more respite was obtained from a pill of cob-web than what arises from, or belongs to the action of wine, opium, or any thing else within my knowledge.

“ Further, the power of cob-web has been tried, and its good effects have been proved, in other forms of irritation besides those that are strictly febrile. In spasmodic affections of various kinds, in asthma, in periodic head-aches, in general restlessness and muscular irritabilities, its good effects are often signal. The cob-web gives sleep, but not by narcotic power ;—tranquillity and sleep here appear to be the simple consequence of release from pain and irritation. Cob-web has also been applied locally,—under my own eye, to ulcerated and irritable surfaces with singular good effect. At first, the pain which it occasioned was sharp,—but it was momentary ; and the surfaces, which had been painful, irritable, and untractable to other applications for weeks or months, were healed up in the course of two or three days at farthest :—the experiment was made on superficial sores only.

“ I have not made a chemical analysis of the substance in question ; for my chemical knowledge is not of the kind which would enable me to conduct the operation correctly. The cob-web may, perhaps, be thought to belong to the class of poisons ; but, it is somewhat singular, that I have not been able to discover much difference of effect from a dose of ten grains and from a dose of twenty. The changes induced on the existing state of the system, as the effect of its operation, characterize it as powerfully stimulant. 1. Where the pulses of the arteries are quick, frequent, irregular, and irritated ; they become calm, regular, and slow—almost instantaneously after the cob-web has passed

my medical friends, particularly by Dr. Physick and Dr. Dewees, and, though different degrees of value are attached to the article, we are all satisfied, that the representation of its virtues, to which I have referred, is very little if at all exaggerated.

In doses of five grains, repeated every fourth or fifth hour, I have cured some obstinate intermittents, suspended the paroxysms of hectic, overcome morbid vigilance from excessive nervous mobility, and quieted irritation of the system from various causes. Among those who have used it much, I find a contrariety of opinion, as respects its mode of operation. While some consider it as highly stimulant, invigorating the force of the pulse, increasing the temperature of the surface, and heightening excitement generally—others, witnessing no such effects, are disposed to assort it with those remedies which seem to do good by merely soothing the agitations of the system. I confess that I concur in the latter view of its properties. There is much difference in the web of

into the stomach: the effect is moreover accompanied, for the most part, with perspiration and perfect relaxation of the surface. 2. Where the pulses are slow, regular, and nearly natural; they usually become frequent, small, irregular,—sometimes intermitting. 3. Where languor and depression characterize the disease; sensations of warmth and comfort are diffused about the stomach, and increased animation is conspicuous in the appearance of the eye and countenance. 4. The cob-web, applied to a bleeding surface, occasions a very sharp and transient pain:—the bleeding instantly ceases.—The cob-web here recommended is the produce of the black spider, which inhabits cellars, barns and stables: that which is found upon hedges in autumn does not possess the same power, if it be actually of the same nature.”

the various species of spider. That used in this city, is collected in cellars, and is, probably, the product of the common black spider, which is to be generally met with in such dark and damp places. I have satisfied myself, that the web found in light exposed situations, the product of the grey spider, is inert—and also the web of the other, when not recent, which may be known by its glutinous feel.*

HUMULUS LUPULUS

The hop is a native of England and also of this country. It has hitherto chiefly attracted attention as an article of commerce, from its importance as an ingre-

* The following extract shows that the web has long been used. It was also prescribed by Gillespie and Lind, in intermittents, many years ago.

“*Araneus Offic.* The spider. Both the spider and its web are used. The spider is said to avert the paroxysms of fevers, if it be applied to the pulse of the wrist, or the temples; but it is particularly recommended against a quartan, being enclosed in the shell of a hazel nut. The web astringes and conglutinates, and is, therefore, vulnerary, restrains bleeding, and prevents an inflammation. The country people have a tradition, that a small quantity of spider’s web, given about an hour before the fit of an ague, and repeated immediately before it, is effectual in curing that troublesome, and sometimes obstinate distemper. This remedy is not confined to our own country; for I am well informed, that the Indians about North Carolina have great dependence on this remedy for agues, to which they are much subject; and I am acquainted with a gentleman long resident in those parts, who assures me he was himself cured by it of that distemper. And, indeed, experience confirms the efficacy of this medicine in the cure of agues.”

James’s Dispensatory.

dient in malt liquors. But it is also possessed of such medicinal qualities as entitle it to a place in the materia medica. The flowers of the plant, which only are used, are aromatic, bitter, astringent, and decidedly tonic and anodyne.

Of the bitters, there is scarcely one more agreeable to an enfeebled stomach than the hop, and hence it is advantageously prescribed in dyspepsia, particularly where it proceeds from intemperance. Yet it is, perhaps, as a narcotic that it has the highest claims. The fact of its being possessed of this property was long known, so generally so, indeed, that a pillow of it came to be a popular expedient to quiet nervous irritation and procure sleep.* An exact investigation of its powers was first made about twenty years ago by my friend Dr. De Roche, in his inaugural essay, at Edinburgh, and since that period it has been much employed in regular practice, both in Europe and this country.

As an anodyne, it may be substituted for opium, where the latter, from idiosyncrasy or other causes, does not suit the case. It is well adapted to drunkards, and I have found it a useful auxiliary in the treatment of mania a potu. The nervous system or stomach being much deranged, the hop will always prove more or less beneficial. As an antispasmodic it is indeed not without power. It has been prescri-

* It is said to have been directed by Dr. Willis in the case of the late king of Great Britain, and with effect. My own trials of it have not, however, inspired any confidence in its powers as an anodyne.

bed in the neuroses, with what effect I do not know. I have sometimes tried it successfully in the advanced stages of typhoid fevers, where nervous tremors or subsultus tendinum existed. It is also serviceable in spasmodic uneasiness of the uterus, either before or subsequently to delivery.

The hop may be exhibited in decoction or infusion, in tincture, or pill made of the extract. As a tonic, I have found the infusion best, and, as an anodyne, the tincture. The former may be taken in the dose of a large wine-glassful, and the latter in that of a tea-spoonful, each to be repeated and increased as the case may demand.

HYOSCYAMUS NIGER.

The black henbane is a native of several countries in Europe, and succeeds very well among us. Of all the articles of the materia medica it is said most to resemble opium, at least as regards its narcotic qualities. Every part of the plant is possessed of activity, and the root not less than the leaves. The former resembles very closely that of the parsnip, and, when eaten through mistake, has sometimes induced the most fatal consequences.

Moderately exhibited, henbane invigorates the pulse, with some augmentation of temperature, which is followed by diminished sensibility, and sometimes by such general composure of the system as to in-

duce sleep. It occasions, in a larger dose, thirst, sickness, stupor, and dimness of vision—and in excess, delirium, subsultus tendinum, risus sardonius, coma, apoplexy, convulsions, with a remarkable dilatation of pupil, distortion of countenance, weak, tremulous pulse, cold sweats, &c. The lower extremities sometimes also become paralytic, or are covered with a gangrenous eruption.

Being so analogous to opium in its leading effects, it has been resorted to in a variety of cases, as a substitute. It is supposed to have the narcotic power in a considerable degree, without creating constipation of the bowels. My hopes, I confess, in this respect, have not been realized. Yet, undoubtedly, it will ease pain, or soothe irritation, and in this way sometimes disposes to rest. It has been much extolled in mania, and is also prescribed in a variety of nervous and spasmodic affections, as epilepsy, chorea, tic douloureux, asthma, pertussis, palpitations of the heart, &c. By some, it has likewise been recommended in hæmoptysis, attended by spasmodic cough, and general irritability of system. Nor is it less known as a remedy in scirrhus and cancer, and in scrofulous and other painful ulcerations. To meet these last indications, it is exhibited largely, while the diseased parts are washed with a decoction of it. The dose of the extract or of the powdered leaves, the only preparations commonly used, is two or three grains, to be increased very considerably, where it is continued for any length of time. There is also a tincture to be

met with in the shops, the dose of which is thirty or forty drops.*

CONIUM MACULATUM.

Cicuta is indigenous to Europe. It grows, however, in many parts of the United States, and can now be procured in great abundance, and of an excellent quality, in the neighbourhood of this city. No part of the plant is entirely destitute of strength, though the leaves are possessed of most activity. Taken in the ordinary dose, not much sensible effect is created by it. But when increased, vertigo, disturbed vision, tension of the forehead, nervous tremors, &c. are induced: and urged still farther, we have all the violent consequences described under the preceding article.

Cicuta was known in the earliest times. The Greeks used it to inflict the punishment of death, and, among the victims of its poisonous agency, was one of the most celebrated of the philosophers of antiquity. Nothing, however, seems to have been accurately ascertained respecting its medicinal virtues till near the middle of the last century, when Baron Stærck commenced his experiments with this and many other of the narcotic plants. In a work which he soon after gave to the public on this subject, he

* Lately the chemists have detected an alkaline element in henbane, which they denominate *Hyoscyama*.

proclaimed its efficacy in scirrhus, and in cancerous sores. The weight of his authority speedily attracted a good deal of attention to the remedy, and cases in attestation of its powers were published by many distinguished practitioners in every section of Europe. So confidently were these annunciations made, that the medical world appeared to be persuaded, that what had so long been desiderated, a remedy for these dreadful affections, was at length obtained. But a more candid estimate of its powers has led to the conclusion, that, while it is totally incompetent to a radical cure of genuine cancer, its utility as a palliative is undeniable. I have had several opportunities of observing its beneficial effects under these circumstances.

Few remedies are more servicable than the cicuta in scrofulous ulcerations. These commonly appear about the neck, or seize on the fauces, the tongue, the scrotum, in men, or the labia in women, and the rectum in both sexes, which are all sometimes of a very intractable nature. As might be presumed, it has been found advantageous in the ulcerations of the advanced stages of the venereal disease, and it is most unquestionably one of our best means, in the irritable sores of pseudo syphilis. In such cases, while given internally, it should also be used as an external application, in the shape of a lotion or cataplasm. Thus employed, if it do not always advance the cure, it stays the progress of the disease, and mitigates the violence of pain.

Cicuta is scarcely less serviceable in several of the cutaneous diseases. Even in leprosy, it has done good, having, in the hands of the late Dr. Kuhn, greatly relieved, if it did not entirely cure, a case of this disease.

Elephantiasis, which, perhaps, is a species of this foul distemper, is certainly sometimes successfully managed by it. To this point we have the evidence of the West India, as well as of some of the European writers. No opportunity has ever occurred to me of seeing it employed in these more inveterate affections of the skin, though, with the facts which have been stated, I cannot doubt of its utility. My experience is limited to the ordinary herpetic and venereal eruptions, in which I prescribe it sometimes with advantage. Combined with corrosive sublimate, or a very small quantity of calomel, too small even to excite salivation, I am inclined to believe we improve the efficacy of hemlock in the whole of the preceding cases.

In chronic rheumatism, cicuta is a very common remedy, particularly in the East Indies. I have had recourse to it in a few instances, always, however, with some of the mercurial preparations. Combinations of this sort determine to the surface, and promote perspiration. They moreover lull pain, and frequently compose the patient to sleep. It is said that this same prescription is well adapted to the second or third stages of pneumonic inflammation, and there is some reason to presume that it may be serviceable. Certain it is, that in pulmonary consumption I have pal-

liated symptoms by the use of mucilaginous mixtures, in which *cicuta* was substituted for opium. It is far less stimulating than any of the preparations of that article, and is not destitute of anodyne power. Cases are indeed recorded of confirmed genuine phthisis having been cured by this medicine alone. I have never witnessed any such signal effects from it, though it is altogether likely that it might contribute to heal scrofulous ulcers of the lungs.

Much was once said of this medicine in asthma: the cases however to which it is more particularly applicable have not been pointed out with perspicuity. I formerly employed it a good deal in this disease, and with varied success. To spasmodic asthma, it seemed to me to be best suited, and, as a palliative of the paroxysm, is, at least, deserving of some slight attention.

In pertussis, it has been even more celebrated by Butter and others. That it proved beneficial in some instances, is too well authenticated to be doubted: yet it seems by degrees to have lost its character, and now is wholly rejected. Baffled in my attempts to cure this obstinate complaint by the ordinary remedies, I formerly resorted to it. Like an opiate, I found that it allayed the cough for the moment, but made no permanent impression on the disease.

Cicuta, at one time, maintained no inconsiderable reputation in the nervous and spasmodic affections. It was particularly commended in epilepsy, hysteria, chorea, *tic douloureux*, and in some of the complaints

of the alimentary canal. But I suspect that few now doubt of its inefficacy in most of these cases. No one I am sure, would at present think of trusting to it, either in epilepsy or chorea. In very large doses, I am inclined to believe that it is occasionally productive of advantage in neuralgia. I have seen more than twenty cases of this extraordinary affection here and in Europe, and, in most of them, the pain was at least palliated by the free exhibition of the medicine. One radical cure Dr. Fothergill effected by it, and lately, my friend, professor Jackson of Boston, than whom I should in vain look for higher medical authority, has greatly extolled it. By the very liberal and long continued use of it, I am assured, he has been exceedingly successful in several instances of the disease. Emetics, however, have proved so useful in it, that in the practice of this city, they have now nearly superseded every other mode of treatment.

Cicuta has been very indiscriminately prescribed in mania, and, of course, with opposite results. Of its powers in these diversified cases, I cannot speak from my own experience. But it is obvious, that its administration ought to be regulated by nearly the same principles which guide us in the use of opium. To puerperal insanity, and that species induced by intemperance, though supposed to be particularly suited, I have not the least doubt, it is incomparably inferior to combinations of opium and camphor, in both cases.

Its reputation is better established in jaundice, and

particularly when proceeding from spasm of the biliary ducts. The New-England physicians seem much attached to the remedy, and it has received the unequivocal commendations of Professors Jackson and Bigelow, and of Dr. Fisher.

In concluding the history of this article, I wish to press its great importance. There are indeed several diseases, in which it is of the highest value. We have, perhaps, no medicine, or set of medicines, capable of producing precisely the same effects. Without it, some of the cases I have enumerated would be hardly manageable. I am led to enforce my recommendation of it strenuously, as, in consequence of the denunciations of some late authorities, it is at present not much prescribed.

Having employed it very extensively both in public and private practice, I am convinced, that its powers have been much less exaggerated by Stœrck than is now generally supposed. As an active remedy, it has lost its reputation, I suspect, from its being formerly found in the shops in a very inert state, and, probably, still more from the small quantity in which it is exhibited.

The extract of hemlock imported from Europe, I hardly ever met with possessed of any strength. But the several preparations of the medicine from the American growth, may be had in our shops in great perfection.* Being, at all times, an ar-

* In the preparation of the extract, much care is demanded. We are told by Orfila, that a drachm of it prepared by himself, was more efficient than an ounce of such as he procured in the shops.

ticle of uncertain operation, I generally begin with about four grains, three times a-day, and cautiously enlarge the dose, till it acts powerfully on the system. In many cases, I have given as much as half an ounce of the powdered leaves, or recent extract, in the day, and sometimes nearly double this quantity.

My rule, in short, is gradually to increase the dose, till some very positive effect is produced, and the only circumstances which call for a reduction of it, are giddiness, nausea, or purging. When these come on, we must intermit the medicine for a time, or lessen the quantity. Boldly prescribed, as I have directed, I may venture to repeat, that the cicuta will rarely disappoint our just expectations.*

ATROPA BELLADONNA.

The deadly night-shade is a perennial plant, growing in different parts of Italy and Switzerland, which I believe has not been cultivated to any extent in this country.

It is usually found in dark and sequestered places, remote from other vegetation. Every part of it is actively virulent. It bears fruit, which, when ripe, resembles a cherry, and is frequently eaten by children

* It has lately been ascertained, that the medical activity of this plant, resides in a resinous element, which may be obtained in an insulated form. It is called *conein*. The solubility of this principle in alcohol, renders a tincture of cicuta an eligible mode of preparation.

through mistake. The symptoms excited by this indulgence, are of the most alarming and distressing nature, as dryness of mouth, insatiable thirst, convulsive tremblings of the tongue, difficulty of deglutition, great anxiety about the præcordia, with an inability to vomit. Delirium next ensues, accompanied by gnashing of the teeth, and the most horrible spasms and convulsions. At this period, the pupil of the eye remains widely dilated, being insensible even to the strongest glare of light. The face is tumid, and assumes a dark red colour, with the jaws locked, as in tetanus. Death ultimately takes place, and the body rapidly putrefies, emitting a stench singularly offensive.

On dissection, all the marks of extensive mortification of the stomach, intestines, and neighbouring viscera, are revealed. Yet, deleterious as are its effects, when taken in excess, it may still be so managed, as to become a safe and useful medicine. Experiments show, that, besides possessing a very considerable narcotic power, it slightly promotes most of the secretions and excretions, and especially the perspiratory, urinary, and salivary discharges.

Belladonna is one of the narcotic articles which were much employed half a century ago, in a great variety of complaints. Those, however, who were led to its use, speak very contradictorily as to the result of their experience. In epilepsy, chorea, tetanus, paralysis, and some other cases of neuroses, it is now pretty generally conceded, that very little has been

done with it. Yet, of late, it is strongly recommended in neuralgia facialis, by an English writer,* and much has been said on the continent of Europe, of its powers in hydrophobia. It has also been recommended in menstruation, and still more strongly in whooping cough, by some of the continental writers. The state of medical opinion is low in relation to its powers in the several forms of mental derangement. But it has retained more reputation as a remedy for cancerous ulcers, and other kindred complaints. Even Cullen, so sceptical on the subject of medicines, and especially of this very class, expresses some confidence in its efficacy. After admitting its uncertainty, he states, that he has known a cancer of the lip entirely cured, a scirrhusity in a woman's breast dissipated, and an ulcer below the eye, which assumed a cancerous aspect, considerably amended by its use, "But," continues he, "I must at the same time own, that in several cases, both of scirrhusities and open sores, it has not answered my expectations."

It would be easy to collect, from the writers of the period when the medicine was in repute, many additional facts of the same purport as those which I have just mentioned in its favour, were it not superfluous to multiply authorities on this point. There can be little doubt, from a survey of the whole evidence, that it has occasionally been of service in these cases, and that, either from the caprices of medical fashion, or

* Bailey on Belladonna.

from the dread of prescribing so poisonous an article, it has been prematurely abandoned.

In its operation on the system, it sometimes evinces, as before remarked, some diuretic properties, and hence has been used in dropsy, though with what degree of advantage, I cannot say. Nor do I possess more knowledge of its use in intermittent fever, a disease in which it has been proposed, as a substitute for opium, to avert the paroxysm.

Applied to the eye, in a weak watery solution, the extract of belladonna will widely dilate the pupil, and it is said, by the action which it induces, the crystalline lens is, in some degree, brought forward. To cause this effect, it is resorted to by surgeons, in the extraction of the cataract, and to facilitate some other operations on the eye.

An analogical extension of the practice has recently been made to some of the purposes of midwifery. "In a few of those perplexing and wearisome cases of labour, arising from rigidity of the os and cervix uteri, and which often harass both patient and practitioner, through successive nights and days, I have," says Dr. Conquest, "seen decided benefit result, from the introduction of about a half to a drachm of the extractum belladonnæ, by gently rubbing it, about the mouth and neck of the womb. It has suspended unproductive uterine action, and produced relaxation of parts, so that, on the recurrence of expulsatory efforts, the os uteri has readily yielded, and permitted the head of the child to pass."

I confess, I do not think much of this suggestion, and am induced to notice it more from the respectability of the source whence it proceeds, than any conviction of its importance.

I have rarely employed this article. But I cannot help thinking, that it might be made applicable to many useful purposes, and that we have too hastily excluded it from practice.

The dose is one grain, either of the extract or powdered leaves, or twenty-five or thirty drops of the tincture, to be repeated every four or five hours.*

SOLANUM NIGRUM.

The black, or garden night-shade, as this species is familiarly termed, may be met with very generally throughout the United States. Whether it be indigenous I do not know, though I believe it is considered by the botanists as a foreign plant, derived from the middle countries of Europe. In its medicinal qualities it resembles belladonna, and may be employed in nearly the same circle of cases. The chief difference consists in the former commonly exciting the secretory actions, particularly of the skin and kidneys, more actively: it also purges sometimes very copiously.

* An alkali, called *atropia*, has been discovered in Belladonna, by Mr. Brande, to which this medicine owes all its peculiar properties.

Never having employed the article, I am prepared to say little concerning it. But, like the narcotics of the same family, it was at one time much extolled in scirrhus, cancer, scrofula, syphilis, scurvy, as well as in many of the nervous and mental affections. As a cataplasm, it is said to prove discutient, and lenitive to painful tumours, scrofulous, cancerous, or otherwise—and, moreover, “to abate the violence of inflammation in the eyes, headache, pain in the ears, acrid defluxions, syphilitic and erysipelatous inflammations,” &c. &c. In this mode, and for nearly similar purposes, it was used by the ancients. But in the progress of time, the article was lost sight of, and continued to be disregarded, till revived by Gataker, an English surgeon of eminence, who wrote on the subject about the middle of the last century.

Dried or recent, a grain of the leaves, infused in an ounce of boiling water, is directed at bed-time, every night. But the quantity is gradually to be increased, so that some of the sensible effects which I have mentioned shall be constantly produced. It has, indeed, been remarked, that without such a decisive action on the system, it does no good in any one disease.

SOLANUM DULCAMARA.

The woody night-shade, sometimes called *bittersweet*, is found abundantly in this country, of which

it is indigenous, in common with Europe. It delights in a damp soil, protected in some measure from the sun, and hence is to be met with on the side of ditches covered with bushes, or under the eaves of houses not inhabited, or other shaded positions. While it possesses most of the properties of the last article, it is distinguished by some peculiar ones, and is less deleterious or hazardous.

Dulcamara promotes the action of the bowels, the skin, and kidneys, even more powerfully than the black night-shade, and with much greater certainty. It proves, indeed, on some occasions, so actively diuretic, that it has been placed with that class of medicines, and it would not be difficult to collect some evidence of its doing good in dropsy. It is, however, in cancerous, and the analagous cases mentioned under preceding heads, that it has been chiefly employed, more particularly as a wash, where the sores are irritable and phagedenic. My own experience with it is limited more to the syphiloid affections, and now and then I have been exceedingly well pleased with its effects. But I have derived still greater advantage from it in chronic eruptions, which I have known it to remove, when even the better established remedies had totally failed. Willan and Bateman both speak very favourably of it in these respects, and the latter especially, as a cure for lepra. It is useful, too, in chronic rheumatism, and will occasionally afford relief in the painful affections of the advanced stages of syphilis. What are its powers as a deobstruent in glan-

dular obstructions, in which it was once much celebrated, I cannot say from my own observation.

On the whole, I believe this to be a very valuable article, and entitled to a much more prominent place in the materia medica, than it at present occupies. It is prescribed in strong decoction, of which the dose is an ounce, often repeated, and gradually increased till a pint or more is consumed daily. This may also be used as a wash.*

SOLANUM TUBEROSUM.

Being a species of solanum, the potato might be suspected to have qualities similar to the other articles of the same family. But it is only within a very short time, that this has been demonstrated satisfactorily.

Experiments, conducted under the auspices of Dr. Latham, president of the College of Physicians of London, have so fully ascertained its narcotic properties, as to warrant the expectation that it will hereafter hold no mean rank in the catalogue of medicines.

He has prescribed it in protracted coughs,—in chronic rheumatism—in angina pectoris—in cepha-

* The bark of the root, simmered moderately for some hours in fresh butter or cream, forms one of the most efficacious ointments, to be applied to excoriated nipples of nursing women.

lalgia—in a case of calculus lodged in the ureter—and in cancer of the uterus, in all which diseases it proved highly advantageous.

“ I am unwilling,” he observes, “ to say more of the *solanum tuberosum*, lest I should hereafter be found to have said too much. But I think it superior to *hyosciamus* and *conium*, and, therefore, with confidence recommend it to my professional brethren, not only in cases, where those medicines have been most commonly employed, but generally in all chronic cases where there may be excess of painful irritations, or irregularity of action.”

The preparation used is an extract of the leaves and stalks of the plant, of which the dose is half a grain, several times a day, to be increased, as in the case of all other narcotics, to a much larger quantity.*†

DATURA STRAMONIUM.

This plant is also known by the familiar title of Jamestown weed, and by a variety of other names, as henbane, thorn-apple, stink-weed, &c.

* It appears, that about a pound of the extract may be procured from seven pounds of the leaves and stalks.

† The above experiments have recently been repeated by Dr. Worsham, on the potato of this country, and with very opposite results.

He could not detect any active principle in the extract, prepared precisely in the same way, which may probably be ascribed to the degeneracy of the plant among us, by peculiarities of soil, culture, climate, &c.

Doubts have been entertained whether it is a native of the United States. Be this as it may, it now grows in every section of the country. It is one of those vegetables, which delight in a rich soil, and is most commonly to be seen on a dunghill, or other spots of great fertility.

The stramonium is among the most powerful articles of the materia medica, and in many of its properties, closely allied to the narcotic stimulants. Though at one time denied, this has been fully demonstrated. By very well conducted experiments, it appears, that, even in a moderate dose, it produces all those symptoms which denote universal excitement: and, if the quantity be much increased, actions arise, of the most violent and irregular nature. It has been known to excite tetanus, hydrophobia, and the wildest forms of mental derangement. Cases of each of these affections, produced in this way, are recorded by writers of such respectability, as to leave no distrust of their truth.

In Beverley's History of Virginia, there is a very curious account of the effect of this article. It is related by this early historian of that state, that a party of British soldiers having eaten freely of it as boiled greens, they were very soon attacked in a very strange way, or, as he terms it, the "effect was a pleasant comedy, for they turned natural fools." "One would blow up a feather in the air, another would dart straws at it with much fury, and another stark naked was sitting up in a corner like a monkey, grin-

ning and making mouths at them: a fourth would fondly kiss and paw his companions, and sneer in their faces, with a countenance more antic than any *Dutch* droll. In this frantic condition they were confined, lest they should, in their folly, destroy themselves, though it was observed that all their actions were full of innocence and good nature. Indeed, they were not very cleanly, for they would have wallowed in their own excrements, if they had not been prevented. A thousand such simple tricks they played, and, after *eleven* days, returned to themselves again, not remembering any thing which had passed."

Taken moderately, I have said, it displays all the effects of a stimulant. It is mentioned, indeed, by Prosper Alpinus and Kæmpfer, that the Turks and Indians, who are not allowed to drink wine, sometimes use stramonium in minute quantities, on account of its exhilarating properties.

This article was introduced into the practice of physic by Stœrck, to whom we are indebted for our knowledge of so many of the narcotic poisons. It was employed by him in mania, in epilepsy, and in spasmodic and nervous diseases generally. As is usual in the annunciation of a new remedy, he ascribed the most valuable powers to it, and was soon imitated in its use, by other practitioners, who confirmed, by their testimony, the accuracy of his observations. More diversified trials, however, gradually diminished its reputation, till finally it ceased to attract any attention. Cullen is one of those who

speak slightly of its efficacy: he does not pretend to have had much experience with it.

In the late revival of the medicine, in the practice of the American physicians, it has been more generally applied to the treatment of disease than before, and especially in this city.

I have used it, and seen it used still more, in epilepsy—and, judging from what I have seen, I should say, that it is productive of no great advantage—though a very different report has been made of its powers by many eminent practitioners. It would be easy to collect from the medical records of this country and Europe, a considerable number of cases of that disease, alleged to have been cured or palliated by its steady exhibition. The practice of our hospital and alms-house might afford some of these instances, as, at one period, it was a very common remedy in both of these institutions. No, one, however, seems to have reposed such implicit confidence in it as Dr. Archer, of Maryland. In a communication on this subject, he does not hesitate to advance the opinion, that, “the stramonium, in regular epilepsy, is as efficacious as the Peruvian bark in intermittents.” Other writers, however, as Wadenburgh and Lind of Europe, and Fisher and Barton of this country, give a much more temperate estimate of its properties in this disease. As the result of their experience, they state, that it will often mitigate symptoms, and sometimes even effect a cure. After what I have said, it may be collected, that my confi-

dence is slender in the medicine, though I would not exclude it altogether in epilepsy.

The stramonium has also been prescribed in tetanus. No opportunity has occurred to me of witnessing its effects. I do not know that it promises much, though we are told by Dr. Archer, that he once succeeded in moderating the symptoms of the disease by this article, and that a pupil of his effected a complete cure by the same means. It is perhaps worthy of further trial.

The evidence of the efficacy of stramonium in mania, is by no means deficient. Many of the European writers speak favourably of it. By Professor Hufeland, it is said to be superior to all the other narcotics, and that he has treated with it very successfully, the most obstinate affections of the mind. Bergius employs pretty nearly the same confident tone in recording its effects. He appears to have tried it in all the shapes of insanity, as in mania proper, in melancholia, in puerperal derangement, in that species which is caused by the habit of intoxication, and also in the low delirium of typhous fever.

In our public institutions, I have seen it resorted to, in a great variety of mental affections, and, though with opposite effects, it has undoubtedly, in some instances, proved useful. To this point we have the concurrent testimony of almost every practitioner who has been attached to these establishments. But the practice, so far as I have observed, has not been regulated with sufficient discrimination to enable us to

designate the *precise* cases to which the medicine is best suited.

All that seems to have been particularly attended to, is not to administer it in an active condition of the system. I am myself disposed to believe, that it will be found more efficacious in melancholia, than in any other state of mental derangement. To this conclusion I am led by the whole tenor of my own observations. But it has been said, by very respectable authority, to exert its best powers in mania, produced, or associated with epilepsy, and where the mind is sunk so low as to approach towards fatuity.

The stramonium has been tried in several other affections, as asthma,* ordinary spasmodic cough, tic douloureux, rheumatism, and palsy. As, however, we have no distinct account of the results of the practice, I presume not with much advantage. Judging from the properties of the article, I should suppose it exceedingly well calculated to do good in each of these complaints, as well as in some other cases. Trials, far more extensive than probably have hitherto been made with it, ought at all events to be undertaken.

That a medicine so extremely active should not be more general in its practical applications, is not conceivable. Of the diseases in which it promises to be of the greatest service, are some of those of the eye, as incipient gutta serena, and in certain forms of neuroses, as well as in the cachexiæ. Exhibited

* I allude to the internal use of the article in asthma. The smoking of it I have noticed under the head of inhalations.

either alone or in combination with mercury, I have found it useful as a substitute for cicuta, in venereal and scrofulous ulcers of an ill condition. It corrects the state of the sore, while it subdues the pain and irritation incident to it.

In the management of most of these cases, it is proper to persevere in a course of the medicine for two or three weeks, commencing with small doses, and increasing the quantity by degrees, till it produces some striking effect, which is generally evinced by gastric distress, giddiness, or headach, and still more by a dilatation of the pupil, with vision more or less depraved.*

As an external remedy, stramonium has not been neglected. The leaves steeped in brandy are used as an embrocation to rheumatic limbs—and, when boiled in milk, are said to make a fomentation, which affords much relief in gouty and other painful swellings. Whether either of these popular applications

* In the interval between the first and second edition of this work, a paper has appeared on this article from Dr. Marcet, of London, in which the preceding conjectures, as to its future usefulness, have been very much confirmed.

In summing up the account of his trials with it, he states, “that it appears, in four cases of sciatica, decided benefit was obtained. The efficacy of this remedy was still more strongly marked in two cases of sciatica combined with syphilitic pains. It failed entirely in two instances of diseased hip joint. It produced considerable relief as to pain, in a case of supposed disease of the spine, followed by paraplegia—and likewise in one of the cancer of the breast. It allayed materially the pain occasioned by an acute uterine disease. It was of great and repeated utility in a case of *tic doloureux*.”

Trans. of the Medico-Chirurg. Society of London, Vol. VII.

is serviceable, I do not know. An ointment is also in common use, prepared by boiling the leaves, previously bruised, in lard. It is employed in burns, in hæmorrhoids, and in psora, and other eruptions. In each of these cases I have witnessed its good effects, particularly in piles. This ointment has, moreover, on account of its supposed relaxing effect, been a good deal resorted to in the case of club feet, and the attestations to its efficacy are indisputable. I once saw it employed in a painful tumefaction of the knee joint, resembling white swelling, with the most signal advantage.

Every part of the stramonium is active. But the ordinary preparations internally exhibited are, an inspissated juice, or extract from the recent, and a powder of the dried leaves or seed. Of each of these, the dose is about a grain several times a day, to be increased as circumstances demand. I have given twenty, thirty, and forty grains of the medicine in the twenty-four hours, by thus cautiously proceeding.*†

PRUNUS LAURO CERASUS.

This species of laurel is not to be found, so far as I know, in any section of the United States, unless it

* Vid. Inhalations and emmenagogues.

† Mr. Brande has discovered, in the seeds of stramonium, a peculiar ingredient, supposed to be an alkali, which he calls *Daturia*.

be preserved as a curiosity. It is indigenous to Europe.

Medical attention was directed to it, as an article of the *materia medica*, nearly a century ago. Experiments made at the time, and subsequently, clearly evince its prodigious power over the system. In a large dose, it extinguishes life at once, without a struggle: more moderately given, it occasions convulsions, tetanus, palsy, and those other effects common to all the narcotic poisons. Cullen remarks, that, however violent its operation may be, it never produces any inflammation, as is proved by inspection after death. To this circumstance, he seems disposed to ascribe the speedy and entire recovery of animals subjected to its influence, which sometimes happens.

In small doses, it is said to lower the pulse, and to diminish the sensibility and irritability of the system. It has on this account been tried in pulmonary consumption, and, agreeably to the reports on the subject, not entirely without success. In the mental or nervous affections, as hypochondriasis and hysteria, it is alleged to have done good, and we are told, that it imparts tone to the stomach, invigorates appetite, and exhilarates the spirits. It has lately been much extolled in intermittents, and is also represented as exceedingly efficacious in very inflammatory gonorrhœa, ophthalmia, and similar cases, which, if true, may perhaps be explained by reference to its powers over the circulation.

With this article I have no experience. But it seems probable, that it might be made an important remedy, in many of the cases in which the other narcotics have been so beneficially employed. I think it promises much in some of the forms of neuroses, and perhaps still more in scirrhus, cancer, and such like affections. It has, indeed, very recently been said, by some German practitioners, to cure hydrophobia—and we learn, from the same source, that a cataplasm, prepared from the leaves, is an excellent emollient application to painful tumors and ulcers.

The preparations of the laurel are a saturated tincture, and a distilled water, both made from the green leaves, which, in the recent state, are fragrant and bitter, resembling, in a considerable degree, in these respects, the leaves of the peach and cherry. The dose of the tincture is from five to ten drops, and of the distilled water from thirty to fifty drops. To the prussic acid which it contains, all the activity of the laurel is undoubtedly owing.

ACIDUM PRUSSICUM.

This acid was discovered by Scheele in 1780. It is contained in a variety of vegetable substances, as the leaves of the preceding plant, and of the peach, as well as in the kernel of the cherry, the bitter almond, the peach, &c. Not long after its discovery, it was ascertained to be exceedingly active, even deadly poi-

sonous, and a variety of experiments was made by different individuals in illustration of its effects. But it is only within a few years, that attention has been directed to it as a remedial resource, and its properties in this view determined, with any certainty or precision.

Concentrated prussic acid, prepared according to the process of M. Gay Lussac, is proved indeed to be, of all known agents, the most decidedly active and deleterious in its effects on the living system. A single drop of it introduced into the throat, or applied to the eye, or injected into the vein of a dog, destroyed life as instantaneously as if he had been struck by a "*cannon shot, or by lightning.*" Even the inhalation of the vapour of the acid, which, from the want of care, was done in one of these experiments, caused "the most excruciating pain in the chest, attended by a feeling of insupportable oppression, which lasted some hours." But, poisonous as this article is, it is ascertained that, when properly diluted with water, it may be safely and usefully prescribed as a medicine, in various affections.

"We know," says M. Majendie, to whom we are indebted for much of our information relative to its medicinal application, "from the experiments which Mons. Coulon made on himself, that it may be given to the dose of sixty drops* without producing any very serious inconvenience. Besides, the pretty fre-

* This of course was a weaker preparation of the acid.

quent use made in medicine of the laurel water, in which the prussic acid enters as a component principle, proves that it may be introduced into the stomach. Nothing, therefore, shows any impropriety in its use as a remedy, a circumstance which has already induced some French and Italian physicians to give it in various disorders. If their success has not been equal to their expectations, it is because they did not seem sufficiently aware of its mode of action on the animal economy—and without this knowledge it is impossible to make a right use of any new remedy.

“ In studying the phenomena of poisoning by prussic acid, I have often observed, that animals, in which no trace of sensibility or muscular contractility could be found, would often continue to breathe for several hours, freely—while their circulation, though much accelerated, remained apparently unaltered. These animals indeed might have been said to be dead with regard to their external functions, though still enjoying life through their nutritive faculties.

“ This property of extinguishing the general sensibility without any ostensible injury to the respiration and circulation, the two principal functions of life, induced me first to believe, that the prussic acid might be advantageously used in cases where the disease seemed to owe its origin to a vicious augmentation of sensibility. From that moment I determined to employ it whenever any such case should offer itself to my attention.

“ I have since then,” continues he, “ had repeated

opportunities, chiefly with young ladies, to employ the prussic acid in cases of nervous and chronic coughs—and have always obtained the greatest success, without having observed any inconvenience from it. In no case have I gone beyond the dose of *ten* drops, taken at intervals during twenty-four hours, and diluting it with several ounces of some fluid vehicle.

“Very lately I have succeeded in calming by this same means a convulsive cough, with which an elderly lady of a nervous temperament had been greatly affected, and which for six days previous to my seeing her, had come on by alarming fits, depriving her of all rest. I was so much the more willing to adopt in this case the use of prussic acid, as the patient could take neither opium nor any preparation of poppies, without being grievously incommoded.

“After thus having ascertained the efficacy of the prussic acid in the treatment of dry convulsive cough, I thought it was indispensable for me to inquire whether the same means might not be employed with success to combat the cough and other symptoms which overpower the unhappy consumptive—and whether it would not influence, or even suspend the progress of pulmonary consumption.

“The result of my trials has been favourable with regard to the first of these conjectures—and on fifteen persons, affected with phthisis, who had been placed under my care for the last three years, I have constantly found that the use of the prussic acid, given in small but repeated doses, diminished the fre-

quency of the cough, moderated, and rendered more easy the expectoration, and, lastly, procured the patients some sleep at night, without any colliquative sweats. Those who are accustomed to follow the march and progress of phthisis, and witness the sufferings without number, by which individuals attacked by this terrible malady are overpowered, will easily appreciate the real benefit of this success.

I have had, within the last few months, many opportunities of studying the effects of prussic acid on a great number of phthisical patients at the hospital of *La Charité*. Mons. Lerminier, physician to that hospital, in which such diseases are very frequent, has, at my request, agreed to administer the prussic acid in about twenty cases, at the dose of four drops properly diluted with water.

“ The greater number have shown evident signs amelioration, and some seem much better at this moment. The cough is considerably diminished—expectoration has become easy, and sleep came to shorten their sufferings. These improvements became more evident, where the disease was in an incipient state—a circumstance which is not difficult to explain, when it is considered, that the lungs are in a state of disorganization, in the second, and, above all, in the third stage of consumption.

“ Yet as I wish to state merely, in this place, the *exact* effects of the prussic acid, I must avow, that amongst the patients of *La Charité*, who have used

it, some, whose disease was near its end, did not derive any very sensible benefit from it—and that in two instances, in which the patients had taken the acid at too short intervals, they experienced some headache, and a kind of vertigo which lasted some seconds. In a third case, it was feared that the acid had proved injurious.

“ From all that precedes, I think I am warranted in concluding, that the prussic acid, given in small doses, mixed with a certain quantity of water, may be advantageously employed in the palliative treatment of consumption, with a view of calming the cough, facilitating the expectoration, and procuring sleep—and that as such it must be considered as the first among the substances usually employed for similar purposes—as it does not seem to excite, like the opiates, any colliquative sweat.

“ It still remains to inquire, whether, by the assistance of the prussic acid, and of its marvellous activity, we might not hope to render the march of phthisis more slow, and even to cure it. But these questions, in themselves so important, on account of the too fatal prevalence of the malady, cannot be decided by a small number of facts and experiments. They ought, on the contrary, to be multiplied as much as possible, taking at the same time into consideration, all the circumstances which might influence the results—and divesting ourselves of all sorts of prejudice.”

Encouraged by the preceding accounts, the prussic acid has been pretty extensively employed, more par-

ticularly, it would appear, in Great Britain. But, as usually happens in such cases, there is great contrariety of opinion among practitioners, as to the precise nature of its powers, and the degree of its efficacy. By Dr. Granville, of London, who has written a memoir on the subject, it is declared, as the result of much experience with this remedy, that he has found it highly beneficial in most of the pulmonary affections, and even in phthisis, as a palliative at least,—easing the cough, facilitating expectoration, and procuring sleep. In several instances of confirmed consumption, the effects are represented as still more decisive, and, on the whole, he is led to conclude, that it may sometimes prove a radical cure of that disease.

To these favourable reports, we have the counter-representations of Dr. Elliotson, also of London, who, in a subsequent publication, tells us positively, that he has never derived the slightest advantage from it, as a permanent remedy, in phthisis, and, though occasionally useful in simple dry cough, and spasmodic asthma, he found it otherwise in pneumonia and pertussis.

Yet, in a different view, he presents the article with even more ardour of commendation. Having witnessed its salutary effects in a case of violent dyspepsia, in which it was given through mistake, he was induced to try it on an extensive scale, in every variety of gastric disease. It was employed in the affection of the stomach, attended by *pain and tenderness in the epigastrium simply*,—as well as where the symp-

toms of dyspepsia were superadded, as *flatulence, vertigo, headache, loss of appetite, nausea, vomiting, debility, nervousness, cough, dyspnœa, pyrosis, gastrodynia, palpitations, &c.*

He found it useless in the neuroses, in mania, in active hæmorrhage, in rheumatism, and in other disorders, in which it is necessary “to restrain the force of the blood’s motion.” He suspects it to be an anthelmintic—and in the proportion of one or two drachms to a pint of water, it allayed the irritation of prurigo pudendi, and some other cutaneous affections.*

To these accôunts many others might be added, pro and con, from the periodical journals of Europe. It may, I think, be deduced from the whole, that the article is still *sub judice*, though its reputation is already rather on the wane.

In the United States, it has been a good deal employed. We learn, that so early as the year 1811, it was prescribed by Dr. Oliver, of Salem, Massachusetts, by whom the credit is assumed of its original administration, and his title seems indisputable.†‡

* Might it not be serviceable in prurigo formicans, used internally, and as a lotion?

† New-England Med. Journal.

‡ I do not know, that, prior to 1811, the prussic acid was used as a medicine. It is true, that the laurel water, which seems to be the same, was the subject of experiment so early as 1730. But this inquiry, which was conducted by Dr. Madden, had for its object, the determination of the *pernicious* effects of the agent on the living body, and though, not long afterwards, Dr. Langrish instituted a set of experiments to ascertain its *medicinal* properties, I believe, for it is long since I saw his paper, he made no practical application of it.

In this city, several physicians have used it, chiefly in the pectoral affections, but, so far as I have been able to ascertain, without having their confidence in its powers at all confirmed. To this general remark, Dr. Nancrede must be excepted, who, in a very interesting Paper, has borne testimony to its utility, in the incipient stages of phthisis, and lends no small support to the preceding statement of Majendie.*

The operation of this acid is directly on the cerebral and nervous systems, lessening sensibility and irritability, without any previous excitation, or inducing inflammation—differing in this respect from nearly all the articles with which it is usually associated, and constituting one of the most conspicuous examples of what is denominated a direct sedative.

My own experience with this medicine is too limited to warrant my expressing any decided opinion regarding it. But I do apprehend, that there is some enthusiasm in the representations which we have had of its efficacy, and, that, as to genuine consumption, particularly, though it may palliate distress, it must be added to the catalogue of remedies in that disease, which have so often come forward with “bloat-ed promise and lank performance.”

There are several modes of preparing the prussic acid, now, from an absurd propensity to get up hard Greek names, called *hydrocyanic acid*, three of which are recommended in the French codex, under the

* Vid. the Philadelphia Journal of the Med. and Phys. Sciences, Vol. II. p. 66.

names of Scheele, Gay Lussac, and Vauquelin. The two latter are much stronger than the former, though all three lose their strength by an exposure to light and air, in a very short time. "To obviate this objection, Dr. Cooper has prepared a solution of the acid in alcóhol, and, in this form, it certainly is much more easily preserved. Yet, it would appear, that it is still liable to a slow decomposition, from the circumstance of its peculiar flavour, resembling that of bitter almonds, decreasing after being kept for two or three weeks, and, therefore, it becomes desirable that it should be renewed as often as possible."

This preparation has been principally used in this city. It is directed in the proportion of one drop to an ounce of sweetened water, of which mixture a table-spoonful may be given, two, three, or four times in the twenty-four hours, gradually increased to a much larger quantity.

DIGITALIS PURPUREA.

Though known for several centuries, digitalis has not been very long introduced into regular practice. In the year 1775, Dr. Withering was induced to make a trial of it in the treatment of dropsy, in consequence of finding it mentioned in a popular prescription for this disease, and the success attending the experiment was so great, that he soon afterwards announced it to the public as a most valuable re-

medy. It immediately arrested much attention, and has since been investigated by a number of distinguished practitioners, who have confirmed the previous account of its virtues in dropsy, and also, to a certain extent, in a variety of other diseases.

As a diuretic, I have treated of this article pretty much at length. But there are many cases in which it is much employed, where its good effects are ascribed to the power it possesses of reducing vascular action, and lessening general excitement. It is in the relation of a *narcotic sedative* that it claims to be inserted in this place.

Directed by such views of the powers of digitalis, it has, by some of its more ardent admirers, been resorted to, even in the early stages of inflammatory diseases. Many of the ablest physicians adopted this absurd practice, and became completely deceived in the result, by the warmth of their devotion. In this extraordinary course the lead was taken by Ferriar, who maintained the article to be even a substitute for the lancet. "It is well known," says he, "that bleeding is very inadequate to the purpose of lessening the velocity of the circulation, unless it be carried to a dangerous excess. The fox-glove furnishes us with the means of regulating the pulse to our wish, and of supporting a given state of velocity, as long as we judge it proper." Entertaining these impressions, he was led to exhibit the medicine in cases of synocha, and, as he informs us, "with much advantage." Nor was the confidence of Currie less in its powers. "I

have," he says, "employed the digitalis to a very considerable extent in inflammation of the brain, of the heart, and of the lungs, and in rheumatism, and have succeeded with it, in situations where I should otherwise have despaired." By Mossman, we are told, that "by a judicious management of the medicine, variously combined, pneumonic inflammation may be obviated with as much certainty as the progress of intermittent fever is arrested by the Peruvian bark." In a subsequent publication, he further remarks, "My prediction respecting the future reputation of the fox-glove, will, I have no doubt, be eventually accomplished. In this town and neighbourhood, the plant is now in more general use than any other healing agent, and, either in a solitary or combined form, it is employed in almost every case of *increased vascular action*. In pneumonic inflammation, and in active hæmorrhage, it certainly possesses powers *approximating to specific*, and even in cases of *continued* fever, of various types, I have repeatedly witnessed the most beneficial effects from its administration." By recurring to the periodical publications of the day, it would not be difficult, were it necessary, to swell the number of authorities in favour of the use of this medicine in the phlegmasiæ and inflammatory fevers. But, whatever may have been the support given to this practice, in the first moments of excitement, it is now wholly abandoned, or very feebly sustained.

The phenomena of active hæmorrhage seemed also obviously to call for the use of digitalis, and it has been accordingly had recourse to, indiscriminately, in bleedings of the nose, the uterus, the stomach, and the lungs. Many proofs might be adduced in confirmation of its efficacy in this state of hæmorrhage, and particularly in hæmoptysis and uterine floodings. The publications of the time are filled with cases of its successful administration, supplied by Currie, Ferriar, and Drake, not to mention a number of other respectable names. Notwithstanding the weight of authority in its favour, I am not a convert to the propriety of the practice. Digitalis can never be substituted for venesection in active hæmorrhage. That increase of arterial action, which causes the rupture of the vessel or effusion of blood in any other way, is only to be removed by the lancet. Yet, there are cases, in which the medicine may be serviceable.

Previously to the effusion in active hæmorrhage, the pulse is full, quick, and hard, accompanied with all the symptoms of the febrile condition. The lancet here is indispensable, as well as in the subsequent stages. After a considerable loss of blood, the pulse becomes soft, the skin is cool, and many of the indications of the phlogistic diathesis disappear. Yet, though the impetus of the circulation be lessened, it still continues more rapid than in health, and even when thus diminished, the newly-formed cicatrix in some instances is unequal to resist it. The vessels

are, therefore, again ruptured, and a repetition of the hæmorrhage takes place. It is not always safe, under such circumstances, to resort to direct depletion, the system being so much reduced as not to bear it. Digitalis, on these occasions, is one of our resources, and often displays its best powers. No great inflammatory disposition existing, it abates the force and velocity of the pulse, and this effect may be prolonged without difficulty, till the wounded vessel is healed, and recovers its natural capacity of resistance. Even here, however, I doubt whether it is equal to the preparations of lead, ipecaëuanha, or antimony. But it is well to be in possession of a number of remedies, of nearly similar properties, since cases may arise, in which, owing to peculiarities of constitution, or other causes, some one may be preferable.

This medicine, I have said, has likewise been much employed in uterine hæmorrhages. These may take place either in the impregnated or unimpregnated state of the womb. The former are usually denominated floodings, and the latter menorrhagia. In the management of floodings with fulness and activity of pulse, we must have recourse to venesection, and afterwards to those articles which are calculated to subdue and keep down action. It is with this view that digitalis, if at all admissible, would be proper. But, though it has been so generally commended, I doubt whether it is exactly adapted to these cases. I have heard of several, and know of one instance, where the bleeding became most profuse under its operation. To check

this species of hæmorrhage, a medicine seems to be required, possessing the two-fold power of lowering the force of the circulation, and constringing the gigantic vessels of the pregnant uterus. Digitalis, instead of doing this, has the contrary tendency of inducing a greater degree of relaxation, and, therefore, of aggravating the mischief. I do not say that such is invariably the consequence, or that it is not occasionally serviceable. Yet I am convinced we have better remedies, and that, on the whole, the use of it is precarious, and somewhat dangerous.

Let me here repeat, what I believe I have before said, that uterine hæmorrhages which observe a periodical regularity, are too apt to be confounded with an increased flow of the menses. To this error, we are, perhaps, to impute, in some measure, the uncertainty of our practice in these cases. All very profuse sanguineous discharges from the uterus I maintain to be hæmorrhages, or, in other words, *effusions of pure blood*, and these are often to an extent threatening immediate danger. Genuine menorrhagia, on the contrary, even when most copious, is never alarming, except in its remoter consequences. The former complaint may be checked like other hæmorrhages, by an appropriate treatment. But the latter, as resulting from a natural secretory action of the uterus, will run on to the usual period of its termination, whatever may be done, unless the discharge be suppressed by some rash and violent interference. Little else is required, in *menorrhagia proper*, dur-

ing the flow, than a cool room, rest, some laxative, as castor oil, to open the bowels, and occasionally, if there be pain or irritation, an anodyne. But in the intervals of menstruation, we should endeavour by various means to make such an impression on the system, as may restore to the uterus its healthy actions.

Much was said at one time, of the utility of digitalis in some of the neuroses, and especially in epilepsy. Never having here prescribed it, I know little of it myself. But I have seen it employed both in Europe and in this country, in almost every shape of the disease, and never with any manifest advantage.

Digitalis, I suspect, in mania, is a more important remedy. Yet my experience does not enable me to state, with any precision, the indications which it is best calculated to fulfil. Were I to use it, which I have not done, it would be in the acute stages of the disease, and after venesection, purging, and other directly depleting remedies. Exhibited under these circumstances, it might, perhaps, lessen the irritability of the system, and contribute towards calming the agitations of the patient.

With very few, or, perhaps, not a single exception, digitalis has been used in all the pectoral affections. It is even now prescribed in the declining state of acute pneumonia, and in asthma, angina pectoris, dyspnoea generally, and in the cough and hoarseness which follow measles, &c. Conformably to the ordinary prescription in most of these cases, it

is simply added to some cough mixture, to keep in check the activity of the circulation, which it sometimes does exceedingly well. But it is to its use in pulmonary consumption that I wish more particularly to attract attention.

A few years only have elapsed, since the confidence of practitioners was so strongly placed in this remedy, that consumption, even in its last stage, was by its agency to become subject to our control. Need I say, that these high-wrought expectations and brilliant prospects have never been realized? Yet, it does appear, after making the amplest deductions for the exaggeration of the moment, that digitalis has evinced occasionally valuable powers in the disease. To deny it would be, indeed, to discredit altogether some of the strongest evidence which has ever been presented in favour of any remedy.

By Darwin, it was early noticed as an important article in the treatment of certain forms of phthisis, and not long afterwards it began to attract more general attention. Ferriar, too, resorted to it in several cases, with considerable success. But no one has used it so extensively as Drake, and his opinion relative to its properties is altogether favourable.

“This medicine,” says he, “has for several years been given in pulmonary hæmorrhage with effect, and certainly will continue to be, with the intelligent, whatever may be the result of its trial in phthisis. I am happy, however, to say, that the success which has hitherto attended the exhibition of digitalis in

phthisis, has been very considerable. *Many* patients in its *confirmed* state have been cured by this remedy, and almost all have been relieved. Life has ever been protracted by it, and when death has taken place, whilst the system was under its influence, it has been free from pain or struggle. My expectations here have been fully answered."

The paper from which I have extracted the preceding observations contains the history of fifteen well-delineated cases of *confirmed* consumption treated by digitalis, and the result is, that nine were completely cured, one relieved, and five died. These cases, authenticated, would be sufficient alone to entitle the medicine to a very great degree of confidence. But I doubt, whether so large a proportion of cures of genuine phthisis was ever effected by any separate article of the materia medica, or, perhaps, I might add, by a combination of all our resources.

Nearly about the same time, a series of trials was also made with digitalis by Fowler, and scarcely with less success. Next came the celebrated Beddoes, who, in an essay on consumption, after stating that his experiments fully corroborated all the preceding accounts of its efficacy, makes use of the following emphatic language. "I daily see many patients in pulmonary consumption, advancing towards recovery with so firm a pace, that I hope consumption will henceforward be as regularly cured by the fox-glove, as ague by the Peruvian bark. Could we obtain a single auxiliary to fox-glove, such as we have in

many instances for the bark, I should expect, that not one case in five would terminate, as ninety-nine in the hundred have hitherto terminated. But I believe that a majority of cases will yield to fox-glove alone. It is evident that no new cases need be suffered to advance beyond the first stage, with the application of this medicine, and few into it."

In the year 1800, M'Ginnis, physician-general of the Naval Hospital at Plymouth, in England, determined, if possible, to settle the question of the degree of efficacy of digitalis, by an extensive and diversified set of experiments. He enjoyed every possible advantage for an inquiry of this description. The cases under his care were numerous, and, being in a public institution, he could enforce those observances in the exhibition of the medicine, which were necessary to the accurate appreciation of its properties. But, with every allowance for the peculiarly favourable circumstances in which his patients were placed, his success was extraordinary, and wholly unprecedented. The number of cases he has reported, amounts to seventy-seven, of which, fifty-three were advanced in the purulent, and twenty-five in the incipient stage of the disease. Now, of these, forty-four recovered, twenty-two were discharged much relieved, and ten only died. It is worthy of remark, that in all the instances of recovery, the pulse was reduced by the medicine considerably below the natural standard, and the amendment seemed commensurate with the reduction.

In the medical journals of the period of which I am treating, many papers on the subject of digitalis in consumption are given by respectable practitioners. Without any particular analysis, we may collect generally from them, that it very frequently effected cures, and, even where it failed to do so, it almost invariably produced some alleviation of the symptoms. Notwithstanding, however, all these accumulated reports respecting its vast powers in this disease, it has, of late, most unquestionably, lost much of its reputation, and seems to be falling into disuse. To the extravagant praise it once received, there has succeeded a more temperate and just estimate of its value. Comparatively, very little has recently been written upon it. The periodical journals no longer contain any of those illustrations of its efficacy, or discussions relative to its properties, which, only a short time ago, engaged so much attention, and even the regular treatises on consumption do not always notice it as a remedy of much importance.

But this, surely, is running, in some degree, into the opposite extreme. No doubt can be entertained of the efficacy of the medicine in the pulmonary affections. It is equally true, however, that its effect has been very various, and for the most part extremely precarious. Though a considerable number of cases, under the general denomination of phthisis pulmonalis, have received advantage from digitalis, it still appears, where the disease was so far advanced, as to be unequivocally marked, the benefit has not been

permanent, and, on the whole, it may be safely affirmed, that the chance of success with this medicine is infinitely less than has been generally affirmed. As the result of my own experience I should say, that it is only suited to the early stages of consumption, and such seems to be the view which is taken of its powers by all the very recent writers whom I have consulted. In a work of Kinglake, better known by his *Treatise on Gout*, fourteen cases of the disease are given, chiefly in the incipient stage, in about one half of which, this medicine was decidedly advantageous. But in the suppurative or ulcerative stages he accomplished only one cure.

It is stated by M'Clean, a writer on the fox-glove, "that it will sometimes cure, when the most approved remedies fail. When it is insufficient of itself to subdue the disease, it will prove a valuable auxiliary to other means. It has always quieted and soothed the sufferings of the patient more or less, and, where it ultimately failed, it lengthened the duration of life, and smoothed the avenues of death. This is all, I apprehend, it will be found capable of performing; but this is doing a great deal. Those who expect wonders from it, or that it will in general cure consumption, will be disappointed."

In a still more recent work on consumption, by Reid, nearly the same language is held. He observes, "that it is only in the early stages of this disorder, that we can with any confidence hope for a cure. But that, however violent the previous symptoms, if no

expectoration of purulent matter has taken place, we may, in general, with safety pronounce the disease curable, and that this remedy, under due regulation, and with sufficient attention to other circumstances of regimen and diet, may be then employed with a prospect of almost invariable success. "Fox-glove," continues he, "although great, has limited powers—and both reason and experience authorize the conclusion, that where the substance of the lungs is generally diseased, and extensively ulcerated, neither the digitalis, nor any other agent, can effect more than to alleviate the patient's sufferings. This, indeed, forms the distinctive and melancholy character of pectoral and other affections of organs, which undermine the fabric of mortality, and divide the slender thread by which existence is supported." To these foreign authorities, I may add the sentiments of the medical men of this country, who, whatever might have been their confidence at one time in the remedy, seem now very generally to distrust its powers, and, though it continues to be prescribed, it is more from the poverty of our resources in this disease, than from any high expectations of its effects.

In the preceding review, I have traced, with some minuteness, the progress of medical opinion relative to the powers of digitalis in pulmonary consumption, that we may be enabled more justly to appreciate its efficacy, and to determine how far this celebrated remedy is deserving of our confidence. Notwithstanding, however, the detail in which I have indulged, I

do not know that I have succeeded in my design, the particular forms or cases of the disease, to which the digitalis is applicable, not being yet clearly made out. Nor, perhaps, can it be done. After all, much must be left to the sagacity of the practitioner, and the power of discrimination, which is only to be acquired by observation and reflection.

I have said, that it seems, at present, to be very generally admitted, that it is only useful in the early stages of the complaint, and of this I am fully persuaded. But even here it proves exceedingly precarious, and very often is manifestly injurious, by prostrating strength, and accelerating the progress of the disease. Like mercury, and some other articles of the materia medica, digitalis would seem, in many instances of consumption, to exchange its *medicinal* for a *poisonous* action on the system, and, whenever this happens, we have a train of affections induced, which hurry the case to a fatal issue.

Yet, every practitioner has probably been occasionally surprised by effects so strikingly salutary from it, that his confidence becomes once more revived, and, thus encouraged, he proceeds with its use, till, by the frequency of its failures, or the mischief it occasions, it is again abandoned in disgust and despair.

No doubt much of the uncertainty of the article may be ascribed to the very vague and indistinct notions entertained with regard to consumption, including under one general title, which is too commonly done, affections of the lungs that are essentially differ-

ent, both in their nature and treatment. As the result of no slender experience with digitalis, I am prepared to state, that the only case of phthisis, in which it can be much relied on, is in the incipient stage of the disease, attended with a slight hæmoptysis, a small, quick, irritated pulse, short and impeded respiration, and a hard, dry, diminutive cough. By subduing irritation, and regulating vascular action, it sometimes proves advantageous, and though even here it will very often disappoint us, still, in the management of such a case, it is one of the resources which ought not to be overlooked.

STRYCHINOS NUX VOMICA.

Nux vomica is the kernel or nut of the fruit of a tree growing in the East-Indies, to which Linnæus has given the above title. With little odour, the nut is very bitter, and in its operation evinces some narcotic properties. Largely given, it violently disturbs many of the functions of the animal economy, exciting vomiting and purging, accelerating the pulse, impeding respiration, and occasioning much anxiety and distress about the præcordia, followed by nervous tremors or convulsions, and sometimes by paralysis or tetanus. But it said, that, whatever may be the severity of its operation, no signs of inflammation are discoverable by dissection, in which respect it corresponds with the *lauro cerasus*.

In common with the rest of the narcotics, *nux vomica* was, at one period, pretty generally employed, and is reputed to have done good even in plague, by inducing a plentiful perspiration. But, though this statement may be made on equivocal authority, we have sufficient reason to believe, that the medicine has manifested no inconsiderable power in the more obstinate forms of intermittent fevers, and particularly in quartan agues. The German writers, who seem most conversant with the article, have also commended it in mania, and the whole of the neuroses, including epilepsy, and hydrophobia, as well as in chronic rheumatism, gout, cephalalgia, lues venerea, scrofulous sores, and chronic eruptions. To these diseases I may add dysentery, in the epidemic form of which, as it prevailed some years ago in Sweden, it is stated to have displayed remarkably beneficial effects. It was here prescribed, probably as a substitute for opium, in a large dose once or twice a day, evacuations having been premised. But we are told by Bergius, that, though it suspended the complaint for a time, relapses uniformly took place, and that its immediate operation was sometimes unpleasant, and its remoter consequences painful and distressing. I have, moreover, understood, that it has proved serviceable in fluor albus, and in virulent gonorrhœa, the nut, when given in the former of these cases, being previously roasted.

Notwithstanding all this, the medicine seems never to have had a well-established reputation, and so

little is it at present estimated by the British practitioners, that it is retained in no one of the pharmacopœiæ of their colleges. But, recently, medical attention has been called to it by some interesting communications relative to its use in paralysis. It was remarked, in describing the effects of this article, that it sometimes induces a tetanic rigidity of the muscles. Being persuaded that this is a very constant effect, or one which at least may be commanded, Fouquier, of Paris, some years ago, conceived, that it might be applied to the cure of palsy, considering the latter disease to depend on an opposite or relaxed state of the muscular fibre. In the interval which has since elapsed, it has been fully tried—and his own experience, as well as that of Dumeril, Majendie, Hebreard, Husson, Asselin, and other highly distinguished physicians, confirms the truth of the speculation, and the value of the practice.

Not long after the administration of the medicine, we are told, that the tetanic condition takes place, which ought to be continued by the repetition of the dose, for a greater or less time, as the circumstances of the case may demand. This state is represented as having all the characteristics of real tetanus, and may be partial or universal, according to the force and extent of the impression made. What is very singular, it is declared, that, by a sort of elective affinity, the action of the medicine, when it is given in the proper dose, is directed to the affected limb, leaving all the sound parts untouched, and this is apt to take place

in proportion as the limb is deprived of sensation and motion. Yet, however violent or general the tetanus may be, no danger results from it: the patient, on the contrary, is so little disturbed, that he often sinks into a sweet sleep.

To attain the precise effect desirable, it is recommended to exhibit four grains of the medicine in substance, or two grains of the alcoholic extract, several times in the day, watching with care the operation of each dose, that it may be duly regulated, But it is sometimes required very largely to increase the quantity, so much so, that in some cases thirty, or forty, or fifty grains of the powder have been given at a time.

What degree of credit is to be attached to this very extraordinary account, I am unable to determine, having never employed the medicine. But I understand it has been done in our public institutions, in a few cases, with little or no success. Yet I do not think that we should draw any conclusion against the practice from so imperfect an experiment, especially as it comes to us supported by some of the best authorities of Europe, and so confidently affirmed that there is scarcely room for doubt or deception. Even admitting that it was fairly tried in the cases to which I have just alluded, we may discover sources of failure, without impeaching its general value, or the credibility of those by whom it is reported. As much as most diseases, paralysis is diversified by its causes—and, while the more simple cases of it are easily ma-

naged, there are others, proceeding from some alteration of structure, or mechanical pressure of the brain or its dependencies, which are placed beyond the reach of all our means.*

* Messrs. Pelletier and Caventon have detected in *nux vomica* a principle termed *strychnine*, to which its active powers are referrible. As in the other narcotics, it is of an alkaline nature.

SECTION X.

Of Antispasmodics.

MOSCHUS.

MUSK is one of the few medicines that we derive from the animal kingdom. The animal* which affords it, is a native of Siberia, Thibet, China, and many other parts of the eastern world. It appears to be a peculiar secretion, deposited in a sac near the umbilicus of the male. Enclosed in small membranous bags, it comes to us in grains, of a black colour, a bitter taste, an unctuous feel, and a very strong and peculiar odour.

Musk was at one time a remedy much confided in, and, as may be supposed from its powers, more particularly so in the nervous and spasmodic affections. It has been given in tetanus, and, according

* The *moschus moschiferus*.

to Heberden, with considerable advantage. He prescribed it in combination with opium, and never, he says, without affording more or less relief. To this point many additional authorities might be cited. The West-India writers,* especially those of an early date, bear very decisive evidence to its efficacy in these cases.

It has also been much used in hydrophobia, alone, or with other medicines, as opium, camphor, valerian, cinnabar, &c. Yet, in common with every other mode of practice, it has wholly failed to cure, or even essentially to mitigate the symptoms of this horrible disease. Nor does it appear that it has been productive of much greater service in epilepsy, or chorea. By the powerful and prompt impression it makes on the nerves, it has sometimes been resorted to with utility, in the hysteric paroxysm, and, on the same principle, it evinces a beneficial effect in hypochondriasis, spasmodic asthma, in pertussis, singultus, palpitations, and most other similar complaints.

Musk has acquired great reputation in the treatment of gout of the stomach. It was originally, I believe, employed in this case by Pringle, whose practice has been since imitated, and fully confirmed. Cullen is among those who report favourably of it, declaring that he has relieved many patients, by the free use of this medicine, who would probably otherwise have sunk under the attack. This is high praise

* Hillary, &c.

from him, who is always sparing in his commendations of remedies, and, I am inclined to suspect, not at all exaggerated.

Like most of the articles to which it is allied, musk has been used in the various states of mental derangement, and is highly extolled by Hillary, and several other respectable authorities. In the first edition of his *Materia Medica*, which was surreptitiously published, Cullen asserts, without any sort of reservation, that he has done more good with it in mania, than with any other remedy. As, however, he advanced in life, and had a wider scope of experience, his confidence in its powers considerably abated, and he speaks of it in language more measured and qualified.

Musk continues to be employed in all the low states of disease, and it is here that it probably displays its best powers. As early as the time of Mead, it was applied to the management of typhous fever, and has since, amidst the vicissitudes of its fortune in other respects, maintained, with little or no diminution, its reputation. Perhaps, no article, in the latter stages of low fevers, is productive sometimes of more advantage. The symptoms which it is particularly calculated to relieve, are, nervous tremors, subsultus tendinum, singultus, and delirium.

Conjoined with carbonate of ammonia, it has been celebrated for its powers in arresting gangrene. By Mr. Simmons, an eminent surgeon of Manchester in England, this practice is particularly praised.

The dose of the medicine is from ten to twenty grains every three or four hours. It is best exhibited in the form of bolus, or julep.* In the case of children, it may be directed as an injection.

MOSCHUS FACTITIUS.

This is prepared, by pouring three drachms and a half of concentrated nitric acid, on one drachm of the oil of amber, and afterwards thoroughly washing the product.† As possessing the properties of natural musk, it is prescribed for similar purposes, though, on the authority of the celebrated Bailie of London, it is used more particularly in whooping-cough. By him it is highly extolled in this disease, and his praise is never hastily or gratuitously bestowed. The few trials, however, which I have made with it, in this disease, did not inspire me with an increased confidence in its powers. But in some other cases, and particularly in the spasmodic affections of the alimentary canal, I have derived great advantage from it. As the *natural* musk can hardly ever be procured unadulterated, it might be best, in most instances,

* ℞ Mosch. Gum. arab. Sach. alb. āā ʒj. Aq. font. ℥iij. m. The dose a table-spoonful.

† In another formula, we are directed to digest half an ounce of nitric acid for ten days upon one ounce of fetid animal oil, obtained by distillation. To this is next to be gradually added, a pint of rectified spirit, and the whole is then to be left to digest for one month.

to substitute the *factitious*. It is given as an emulsion, or tincture, and in the same dose as the natural musk.

CASTOR.

Near the rectum of the Castor Fiber, or beaver, in both sexes, there are two little bags, containing a brownish oily matter, called castor. The best of this article is imported from Russia. That which is commonly found in our shops is derived from Canada, and the northern parts of New England, and is of a very inferior quality.

Castor was formerly in much repute as an anti-spasmodic. By Van Swieten, De Haen, and many other German practitioners, it was highly esteemed, in the neuroses, and especially in epilepsy. It has, however, lost its reputation, and, excepting whooping cough, in which it has lately been recommended, by Dr. Morris, of London, is now only occasionally directed by some practitioners of the old school, in the hysterical paroxysm. It may be given either in powder or tincture, the dose being, of the former, ten or fifteen grains, and of the latter one or two drachms.

PERULA ASAFŒTIDA.

The asafœtida of the shops is a fœtid concrete juice, obtained from a large plant resembling the fennel, a native of Persia, which probably might be raised in the United States. It comes in large irregular masses, composed of numberless little shining lumps or grains, of various hues. It has a strong pungent smell, something like garlic, and a bitter acrid taste. By keeping, it loses its sensible properties, and becomes comparatively inert.

Of the fœtids, this is one of the most powerful and efficacious. Its action is quick and penetrating, and it may be given with great advantage, to meet a variety of indications. In many of the affections of the nervous system, it is much prescribed, and is indisputably useful in hysteria and hypochondriasis. It was formerly prescribed in epilepsy and chorea, without, I suspect, much success. Of late, it is a good deal substituted for musk, in the last stages of typhous fever, and sometimes with effect.

To some of the complaints of the alimentary canal, it seems well adapted, and especially in states of weakness and derangement by intemperance or other bad habits. It will, under such circumstances, "restore tone to the parts, promote digestion, remove the tendency to flatulence, invigorate the general system, and renovate the animal spirits." Being laxative, it also

obviates costiveness, which is a common, and one of the most mischievous attendants on this depraved state of the stomach and bowels.

By many practitioners, this medicine is exceedingly commended in all the spasmodic affections of the chest. With its use in asthma I am familiar, and I can speak of its efficacy with confidence. I do not, indeed, know that we can sometimes manage the distressing paroxysm of this disease, by any other means, with greater certainty. To be effectual, it should be given in pretty considerable doses, and often repeated.

Nor is its reputation less in whooping-cough. A practice which I think is pretty generally adopted at present, in this city, consists, in the first place, in purging on alternate days, for a week or more, with calomel, and, after the disease is somewhat broken, which it will generally be by this course, completing the cure by the exhibition of the watery solution of asafœtida. In more violent cases, however, we bring into this plan of treatment some auxiliary remedies, as emetics, blisters, and even venesection. But these are not often required, if the calomel and asafœtida be judiciously prescribed, and the case has otherwise been properly regulated.

There are several other pulmonary affections, in which asafœtida is beneficially employed. It is often prescribed in the second stage of obstinate catarrh, particularly where expectoration is deficient, with tightness and difficulty of respiration. In circum-

stances of the same kind it is also applicable to protracted pneumonia, croup, measles, and pulmonary consumption. Whenever, indeed, an active expectorant is demanded, it will probably be found useful.

It may be given in pills, or tincture, or watery solution. The latter, I think, in many respects, is the preferable mode of exhibition, as it acts more promptly than the pill, and is less stimulating and heating than the spiritous preparation. The dose of *asafœtida* is from five to ten grains.*

SYMPLOCARPUS FŒTIDA.

This is a common indigenous plant, which, having an odour like the skunk or pole-cat, has received the name of Skunk Cabbage. What is its precise value as a remedy, I am unable to say from any experience of my own. It is, however, commended, by several respectable practitioners, as exceedingly useful in the paroxysm of asthma, in spasmodic coughs, hysteria, pertussis, chronic rheumatism, &c. The root is the only part used, of the powder of which, thirty or forty grains is the dose.†

* Vid. Expectorants.

† The seeds, I have lately heard, are more active than the root.

VALERIANA OFFICINALIS.

This plant is a native of Europe. The root, which is the only part used, is possessed of various powers. Differently exhibited, it produces very diversified effects. But it is as an antispasmodic that it retains the highest reputation, and is now chiefly employed. To the neuroses, as epilepsy, chorea, and hysteria, it has long been thought particularly suited. That it is sometimes productive of advantage in these diseases, my own experience fully assures me. Being, however, pretty actively stimulating, it should not be recurred to in ordinary habits, without evacuations having been premised—and then it is well fitted to overcome a state of system *morbidly susceptible*.

In using the valerian, I have remarked, that it is one of the articles which expends much of its force on the stomach itself, and hence proves most serviceable in those cases of nervous affection, which seem to be radicated in that viscus. It is for the same reason that it relieves hemicrania, and arrests the progress of gutta serena, both of which diseases, I believe, are often primarily of gastric origin. In the former it is strongly recommended by Fordyce, and in the latter by Richter.

Considered as closely allied to the serpentaria, in several of its leading properties, valerian was former-

ly much relied on in low fevers. But such an application is no longer made of it. Of its alleged anthelmintic and emmenagogue virtues, I know nothing.

The valerian is given in powder, infusion, or tincture.* It answers best in the first shape, and the dose is from a scruple to a drachm. Sometimes it may be combined with bark, camphor, myrrh, or carbonate of ammonia, with much utility, the one or the other of these articles being preferred as the case may indicate.†

ALLIUM SATIVUM.

Notwithstanding I have already noticed this article on several occasions,‡ I deem it of so much value, as to require some further attention. Its claims to be considered here rest chiefly on its efficacy in the spasmodic complaints of the lungs, and especially in asthma, pertussis, in certain cases of dyspnoea, of croup, and tussis senilis. Convulsions in children are also relieved by it—and I have known it highly serviceable in dyspepsia attended with gastrodynia, palpitations, nervous tremors, vertiginous affections, &c. This last is a common and troublesome complaint, occurring in gouty and intemperate

* The decoction is an inefficient preparation, and the extract still more so. The *ammoniated* tincture is useful where an increase of cordial power is demanded.

† *Incompatible substances*.—The salts of iron.

‡ Vid. Antilithics, Expectorants, Rubefacients.

persons, and is often a source of great anxiety and alarm. Not at all dependant on fulness of the vessels, it is, I believe, almost always purely of gastric origin. Be this as it may, I have found it more readily to yield to garlic, than to any other remedy. To stomachs enfeebled by excess of stimulation, garlic proves exceedingly cordial, and it may be remarked that drunkards recur to it as it were instinctively. Whether it is of use in any of the neuroses, except hysteria, in which it is sometimes beneficially prescribed, I have not heard.

By Bergius, garlic was employed in intermittent fever with success. Exhibiting one clove of it morning and evening, gradually increasing the quantity, he says, that it hardly ever failed to put off the paroxysms, and that in some instances he cured by it confirmed quartan agues. Of the truth of this statement, to a certain extent, I entertain no doubt. I have witnessed effects almost as striking from the medicine. Given in any kind of ardent spirits, it is much used by the common people of this city, in ague and fever, and I have seen some of the most inveterate cases removed by it.

In deafness from rheumatic affections of the head and other causes, we are told by Bergius, which is corroborated by Cullen, that, introduced into the meatus auditorius externus, it will occasionally afford relief. It may be applied in two ways, either by cotton or wool soaked in the juice, or the clove itself put into the ear, wrapt in one of these arti-

cles. Whether it will cure deafness I do not know. But I have many times witnessed good effects from this latter expedient in the ear-ache, the garlic being previously roasted, though a cataplasm of it is still more effectual.

MONARDA PUNCTATA.*

This may be considered as a new accession to the materia medica. I do not know that I assort it properly. But having, of late, mostly used it as an anti-spasmodic, I prefer, for the present at least, to give it this position.

This plant, commonly designated by the title of *horse mint*, grows very abundantly in the neighbourhood of this city, and probably in other parts of the United States. An infusion of the recent or dried leaves has been for some time employed to allay nausea, or check vomiting, and was the common remedy, for these purposes, especially in bilious fevers, of the late Dr. Kuhn. He also thought well of it as an antilithic, and freely used it in ordinary strangury from blisters, &c. As an emmenagogue, he concurred in the popular notion as to its virtues—placing it on a footing with rosemary, pennyroyal, and similar articles.

This was nearly the amount of our knowledge of

* Willdenow.

the article, prior to the publication of a paper on the subject, by Dr. Atlee, of this city.

By distillation, it appears, the plant yields a volatile oil, of an amber colour, approaching to red, which, if exposed to a greater degree of heat, leaves a beautiful straw-coloured *camphor*.

This oil is represented as being among the most powerful irritants, the smallest drop immediately diffusing a pungent aromatic heat over the tongue and fauces, which remains for a considerable time, and, when applied to the back of the hand, excites redness, heat, pain, and vesication. As a rubefacient, I have already noticed its applications, to which I may add, that I have found it exceedingly useful as an antispasmodic or carminative in flatulent colic,—in gastrodynia and pyrosis,—in retrocedent gout in the stomach, and in the singultus of fever, and similar affections.

OLEUM SUCCINI.

By distillation, an oil is procured from amber, a peculiar bituminous substance dug out of the earth, or found on the coast of the north of Europe. This oil was formerly a good deal prescribed as an antispasmodic, in some of the neuroses. It has, however, gradually lost its reputation, and is, at present, hardly retained in the treatment of any disease except pertussis, where it is still highly commended. Yet I

have sometimes recurred to it with great effect, in the singultus of low fevers—and it is unquestionably entitled to attention as a remedy in pyrosis, and especially where this affection is attended with cramps or spasms. Nor am I altogether convinced that its former reputation in chronic rheumatism and palsy was unfounded: it is at least useful as an external application in both cases. The dose is from ten to thirty drops.

OLEUM CAJEPUTI.

Cajeput oil is highly fragrant, having in some degree the odour of turpentine or camphor, with the taste of peppermint. It was once supposed to be procured from the *melaleuca leucadendron*, a tree of India, though this is now denied, and, with apparently more certainty, it is ascribed to one of the same class, on which the title of *melaleuca cajeputi* is conferred.

Like most of the articles to which it is allied, this oil is actively stimulant, and not without antispasmodic powers. Though not very long incorporated into the *materia medica*, its reputation is pretty well established, as a carminative or antispasmodic in tympanites, flatulent colic, and whooping-cough: and as a diffusible stimulant, it is not less prescribed in chronic rheumatism, in palsy, hysteria, and some other of the neuroses. It is now, however, most used in per-

tussis, and probably with the greatest effect. Externally it is applied to relieve arthritic and rheumatic pains, and in sprains and similar affections. It is also a cure for tooth-ache, put on lint or cotton. The dose is from five to ten drops, though, in the adulterated state in which we generally receive it, much more may be given.

SPIRITUS ÆTHERIS SULPHURICI.

When alcohol and the mineral acids are distilled, a liquor arises, which is called ether. The product in this case varies according to the acid employed, though there is considerable resemblance in the general properties of the whole. Of these preparations, sulphuric ether is preferred for medicinal purposes, and to it I shall confine my observations.

Ether is an active stimulant and antispasmodic, somewhat analagous to alcohol in its leading effects, though more powerful and less permanent. It is sometimes prescribed in the low states of disease, and particularly in typhous fever. But its impressions are so evanescent, that little is gained by it, and it is difficult to imagine a case in which it should supersede wine, &c. With much greater advantage, it is employed to prevent the paroxysm of intermittents, and as an antispasmodic in colic, singultus, retrocedent gout—in cholera, to check vomiting—and in certain other spasmodic or nervous affections, as hysteria,—in

asthma, angina pectoris, &c. Externally applied, it affords relief in muscular pains, as in rheumatism and gout, in cephalalgia. It is an excellent remedy in burns, and has lately been advised in strangulated hernia. In these latter cases, it must operate chiefly by the cold induced from evaporation. The dose is from a drachm to half an ounce, according to the urgency of the case.*

SPIRITUS ÆTHERIS SULPHURICI COMPOSITUS.

This is intended as a substitute for Hoffman's anodyne mineral liquor, the composition of which he did not reveal. It differs chiefly from ether in containing less alcohol and some oil of wine. As a narcotic, calming irritation, and lulling to sleep, it would seem indeed to be superior to ether itself, and will sometimes succeed in these respects, when even opiates fail. Being weaker, it may be given more freely than ether. It is one of those articles which is found generally adulterated, or ill prepared, in the shops of our apothecaries.

* The best formula for the exhibition of ether, is as follows :

℞ Aq. font. ℥iij.
 Sacch. alb. ℥i.
 M. ft. solut. adde
 Ether Sulph. ℥j.

The ether is here so suspended by the syrup, that it does not fly off, and is easily swallowed.

SECTION XI.

HYDRARGYRUS.

I NEXT enter upon the consideration of mercury in its various relations. This article has been most commonly treated of under the head of sialagogues, or that description of substances which promote the salivary discharge.

An increased flow of saliva may be excited, either by chewing acrid matters, or by the internal exhibition of certain medicines. The first are, with great propriety, termed *masticatories*. These, as conducing to no practical purpose, I shall wholly exclude.

The articles which excite salivation through the medium of the general system, as a pretty uniform result, are limited to the mercurial preparations. It is true, there is a series of others, which occasionally evince this power, such as arsenic, copper, lead, the narcotic stimulants, the mineral acids, and, above all, the polygala senega. But the effect is partial, exceedingly uncertain, and, even when it occurs, an-

swers no curative indication. Considering mercury, therefore, as the only real salivant medicine, I am unavoidably led to rescind the class of sialagogues.

To me it has, moreover, appeared absurd to found a title on an article of so diversified an operation as mercury, from an effect that is incidental, not possessed by all its preparations, and which, in many instances at least, is not necessary to the cure of diseases.

Being so peculiar in its properties, it is very difficult to assign to mercury its proper position among the articles of the *materia medica*. But I do not know that a very precise adjustment in this case is of much consequence. As partaking in a considerable degree the powers of each class, it may, perhaps, be as well put between the stimulants and tonics, as any where else,—and it is here that I shall, at least for the present, *locate* it.

In making an application of mercury to the cure of diseases, I must unavoidably be led into a very copious discussion. It is known that no article is possessed of more various powers, or, perhaps, with the exception of opium, in the present state of our practice, employed in so many and in such diversified cases.

Of the medicinal properties of mercury the ancients were totally ignorant—the physicians both of Greece and Rome considering it, on the contrary, highly poisonous.* As a remedy, the first that used it were

* Dioscorides, lib. v. cap. cx.

the Arabians, who enriched the *materia medica* with so many valuable articles. But they restricted it to the cutaneous affections, which they treated with ointments, prepared somewhat in the way of those now in use.

Among its earliest applications was to the cure of *lues venerea*, a disease which at that time was spreading its ravages over the fairest portions of Europe, and menacing the most calamitous consequences to human happiness. It has been said by some writers, that this discovery, among the most important which our science claims, was the result of accident, or at least the offspring of empirical practice. By comparing, however, the evidence which has been brought into the controversy on the subject, it appears, I think, pretty distinctly, that mercury was originally adopted as a remedy in the venereal disease, by regularly-educated practitioners, to which they were led by analogy, having observed its efficacy in other complaints accompanied with ulcerations or cutaneous eruptions.

In treating of mercury, I shall commence with its use in fevers. This would be a very interesting inquiry, could I enter fully into the subject. But it presents so ample a field, that, with my limits, I dare not encounter it. All I can attempt will be little more than a few desultory remarks.

The introduction of mercury into the treatment of the febrile affections, is by no means a new practice. Early in the sixteenth century, it was given by John

de Vigo in the plague, and we shall find, that it was soon afterwards prescribed occasionally in the more ordinary fevers, though it seems not to have commanded entire confidence. Of those who employed it, we are told the celebrated Radcliffe was among the most conspicuous. But, since the reputed success of the mercurial treatment of yellow-fever in the West-Indies, it has become fashionable in this country to resort to the medicine in nearly every variety of the febrile condition.

The fever of tropical climates was once thought to be managed with greater advantage by the liberal exhibition of mercury, than by any other course. To this point we have the concurrent evidence of some of the highest authorities. Many of the West-India practitioners appear to trust almost exclusively to this remedy.* When the yellow fever occurred among us, the same practice, so far as relates to the copious use of mercury, was imitated. It was applied, as well to evacuate the bowels copiously, as to excite salivation. At first this plan was deemed so singularly efficacious, that, in the enthusiasm of the moment, it was proclaimed, that death never took place after mercury evinced its effects. But a cooler and more deliberate observation soon exposed the illusion, and

* As to the efficacy of the mercurial practice in the yellow-fever of the West-Indies, there appears, now, to be a wider difference of opinion than formerly. The practice of Clisholm I find, indeed, to be utterly condemned by several late writers of great authority, and the probability is, that it, in common with all other modes of treatment, has there failed, as in the United States.

the propriety of the practice became universally dis-trusted. It appeared that mild cases of the disease were cured without it, and, when violent, so rapid was the career, that death took place long before the system could be brought under the mercurial impres-sion.

As described by some of their best writers, the yel-low-fever of the West-Indies is a bilious disease, or the hepatic system is much affected in it. But the very reverse of this takes place in the pestilence of our cities. Dissections very numerous, and made under every variety of circumstances, have shown conclu-sively, that it is purely a gastric affection, in which the biliary organs have little or no concern. These were rarely found deranged even in the slightest de-gree. The stomach, on the contrary, was universally met with in a state resembling that produced by the action of certain poisons, or, in other words, pre-senting the phenomena of malignant gastritis.

After considerable fluctuation of opinion, the prac-tice at last adopted consisted of copious venesection in the early stage of the case, pretty plentiful purging with calomel and the neutral salts, cold affusions at first, and next sweating, continued for a length of time, with a succssion of blisters to the region of the sto-mach as well as to the extremities. Such was the outline of a system, embracing certain details, appli-cable to peculiar symptoms or cases, as they might appear under various modifications. That it was very unsuccessful, the records of the number of deaths

which took place in the several visitations of this pestilence, afford the most positive, though melancholy evidence. In this state of uncertainty, on the last return of the fever in this city, every established mode of practice was more or less abandoned, and our measures became, for the most part, tentative and experimental. What was the comparative success, on a large scale, I have no means to determine. Of my own trials I have given some account under a preceding head.*

Condemning the mercurial practice in this case, I am, however, far from doing so in relation to the ordinary autumnal fevers of our climate, and especially those which prevail in the southern states. Not less from what I have observed myself, than from information derived from my correspondence with physicians of that section of the country, I am clearly of opinion that the disease is intimately connected with hepatic derangement, requiring for its cure strong mercurial purges, to an extent much greater than we are accustomed to employ. How far it may be expedient to urge the medicine in these cases to the point of salivation, I am not prepared to pronounce decisively. As a general rule, it obviously cannot be necessary. No doubt, however, there may occasionally be instances of protracted duration, or peculiarly malignity, in which a salivation may be necessary. This has sometimes been my practice in our own bilious fevers,

* Vid. Ol. Tereb.

and I have generally found, as soon as the mouth was affected, that the febrile movement ceased. There would seem, indeed, to be an incompatibility of action, and whenever mercury takes effect, it supersedes the existing disease. But from the vehemence of such fevers, this is not always attainable, and the resource, therefore, becomes precarious and uncertain. In no case should mercury be carried farther, than merely to touch the gums. Every advantage is acquired by this, and to do more is to abuse the remedy, and to entail on the patient much inconvenience, and sometimes very serious consequences.

By some practitioners, mercury has been employed in typhous fever. We have heard of the success of the treatment by purgatives in these cases.* It is proved by actual examination, that, in this disease, the whole of the intestinal canal is loaded with a dark mucus, singularly irritating and offensive. Being removed by purges, and none answer so well as calomel, the system, which before was prostrate, recovers its tone, and the progress of the case becomes more mild and manageable. Equally, perhaps, does it prove serviceable by emulging the liver in its congestive states, to which it is peculiarly liable, in the low or typhoid fevers of our autumnal months.

There is another stage of this fever, in which the same remedy is alleged to prove serviceable. Towards the close of an attack, calomel, given in

* Vid. Cathartics.

minute doses, every two or three hours, to stimulate the blood-vessels, and not to purge, will now and then, it is said, produce the happiest effects. It here acts, by exciting a mercurial fever, which subverts the existing state of things. But, while effecting this purpose, we must use at the same time opium, carbonate of ammonia, and wine. To withdraw these stimuli at such a conjuncture, would be like knocking away the props before the walls were completed to support the building.

In intermittent fever, mercury is not unfrequently prescribed. No one will question the propriety of calomel purges as preparative to the use of the Peruvian bark, or other tonics, in recent attacks of the disease. This, however, is not the application to which I allude. Cases of intermittent, kept up by visceral congestion, or induration, or long continued habit, are very common, and, under such circumstances, salivation often becomes indispensable to the cure,—acting here, by the removal of the obstruction, or dissevering morbid association, as the case may be.

Not a little is said of the efficacy of mercury in the phlegmasiæ. There are some of these affections, however, in which it has proved peculiarly serviceable, and consequently is more employed. The diseases of the larger viscera are of this description, and especially the various morbid conditions of the liver. In the early stage of the attacks of this organ, mercury is rarely demanded except as a purge. The case is

better treated by copious blood-letting, topical and general, and other directly depleting measures. Yet should it, from extraordinary obstinacy, or defective practice, run on to the chronic stage, or even prove refractory to the remedies mentioned, then a thorough mercurial course only can be trusted. All other modes of treatment, in confirmed hepatitis, are only feeble temporizings, or dangerous tamperings.

In conducting a patient through a salivation in this disease, it will be proper to introduce mercury into the system gradually, unless the symptoms are urgent, and, in order to mitigate pain and subdue febrile action, which will occasionally arise, we shall have to recur, in some instances, very frequently to venesection and blisters. The liver, in chronic hepatitis, may be affected by scirrhus, by an abscess, by tubercular ulcerations, or placed in a variety of other states, hitherto not accurately defined, and which cannot be satisfactorily discriminated by any set of symptoms. Nor is it of much importance, as pretty nearly the same treatment is to be pursued under all circumstances.*

In several of the anginose, or throat affections, mercury is employed. The first practical application, indeed, of this medicine in the United States, except in syphilis, was to the case of cynanche maligna. Nearly a century ago, it is said, that Dr. Doug-

* I have reference to the disease as it appears in the United States. In the East-Indies, its progress is so much more rapid, that mercury must be earlier and more profusely employed.

las, of Boston, prescribed it, to excite salivation, and since that period his practice has been variously imitated, some using calomel merely as a purgative, and others combining with it opium, or ipecacuanha, or both, for the purpose of determining more particularly to the surface.

As to my own experience, I cannot say much relative to the treatment of this disease by mercury. It has seldom occurred here since I entered into practice, and never as an epidemic. In the few sporadic cases which have come under my care, I have, after emetics, freely used calomel as a purge. Yet I should never think of salivating in this disease.*

In cynanche trachealis, several respectable practitioners, both of this country and Europe, trust exclusively to calomel. This medicine was originally employed in croup by the late Dr. Kuhn, of this city, who prescribed it so early as the year 1770. More than one of the Scotch medical writers are devoted to the remedy, and consider it as almost infallible. It is said by Professor Hamilton, of Edinburgh, "that in every case where it was employed, previous to the occurrence of the lividness of the lips, and other mortal symptoms, it has completely succeeded, both in curing the disease, and in preventing any shock to the child's constitution." His manner of exhibiting calo-

* By some of the southern practitioners, mercurial gargles are highly spoken of to cleanse the foul ulcers incident to the worst forms of malignant sore throat, and they seem to me to be well adapted to this purpose, though I have not used them myself.

mel would appear daring even to rashness, were we not acquainted with the insensibility of the system, in this disease, to remedial impressions of every description. To a child of two years old he has given upwards of one hundred grains, in twenty-four hours.

From his high standing and character, I entertain not the slightest doubt of the veracity of these representations. Nevertheless, I will not take upon myself to support or recommend his practice. The mode which I have suggested of managing the disease, at least as it appears in this country, I must think decidedly more effectual, as well as less hazardous and repugnant to popular prejudices.*†

Concerning cynanche laryngia in its acute form, I have sufficiently treated on a former occasion.‡ But inflammation of the larynx, in this or any other disease, being neglected, or imperfectly cured, becomes sub-acute, or chronic, promotive in its ultimate effects of a most serious state of things, in some instances even of a species of consumption. This case, under any treatment, proves for the most part very unmanageable, though on the whole, with the aid of occasional topical bleeding and blisters, I believe our reliance must be placed on mercury temperately employed.

Mercury is at present much valued in pneumo-

* Vid. Emetics.

† I have understood, that in a late publication on mercury, Dr. Hamilton entirely condemns the mercurial treatment of croup.

‡ Vid. Emetics.

nic inflammation—a practice, I am inclined to suspect, which originated with the New England physicians. Encouraged by its success in malignant sore throat, as already mentioned, they seemed to have extended it to almost the whole of the phlégmasiæ. The only European writer, so far as I know, who has advocated the same treatment, is Hamilton, of Lynn Regis, and it is certain that it prevailed in this country long before his time.

Of the efficacy of the practice there cannot be a doubt, though it requires some discrimination in its application. In all cases of genuine pneumonia, it will be expedient to premise very copious depletion. But, after vascular action is sufficiently reduced, small doses of the medicine, with opium and ipecacuanha, repeated every two or three hours, are highly serviceable, and especially where there is much oppression. This combination, in the secondary stages of peripneumonia notha, and especially when it occurs in persons advanced in life, is truly an invaluable remedy. It relieves difficulty of respiration, promotes the discharge from the bronchiæ, allays cough, and confirms recovery.

As an expectorant, the *modus operandi* of mercury is very intelligible. By powerfully stimulating the excretories, it enables them to throw off the impacted mucus or phlegm, which is afterwards coughed up and expelled. It is not, however, merely to its effects as an expectorant, that we are to ascribe the benefits derived from it. Directed with skill, there is some-

thing in the union of calomel and opium exceedingly striking, in all cases of reduced inflammation, particularly of the lungs. Either too early or late in the case, it proves ineffectual. The exact point to recur to it is, when, the regular depletory measures having been urged as far as seems consistent with safety, the disease still continues unsubdued.

As relates to bronchitis, I have little to add to what I have said under the head of Emetics. To the chronic shape of the disease, mercury is chiefly suited, and here, in combination with opium, and some of the active expectorants, constitutes the best practice.

In the course of the last twenty years, mercury has claimed much attention in pulmonary consumption, though it is not a new practice. As early as the middle of the seventeenth century, it was used by the well known Radcliffe, in the cure of William III. of England, and, I am told, is also recommended by Moreton, whose work on the disease I have never seen. It had fallen, however, into utter neglect, when revived by Dr. Rush and other practitioners of this country.

That it has occasionally been successful, can hardly be denied. It would, indeed, be easy to collect from within my own knowledge, and from other sources, a very considerable number of reputed cases, where the disease was said to be thus removed. Yet whether any of these was genuine consumption, it is difficult to determine. At all events, the remedy

is exceedingly fallacious, and at present commands little consideration. Even those who at one time confided most in its powers, have ceased, in a great measure, to use it.

Never have I had the good fortune to effect a single cure of real confirmed tubercular phthisis by mercury, though my trials with it have been numerous. I am convinced that in my private practice, and in that of the public institutions which at different periods I have attended, it was employed in several hundred cases. The result of this extensive experience is, that in no one instance of consumption, accompanied with extensive ulceration of the lungs, whether tubercular or otherwise, was mercury of any service.

Nevertheless, there are certain pulmonary affections in which it is indisputably useful. Where the case depends upon venereal taint, as sometimes happens among the vagrants of our large cities, or where it proceeds from previous disorder of the chylopoietic viscera, as is by no means unusual, especially among debauched people, or those residing in miasmatic districts, mercury, properly exhibited, will do more than any other plan of treatment.

The case, however, in which it is best prescribed, is in the incipient stages of consumption, from ill-cured pleurisy or catarrh, and this is by far the most common form of the complaint among us. Commenced early, a moderate salivation, continued for several weeks, will almost invariably arrest the progress

of the attack, and, ultimately, wholly eradicate every tendency to the disease.

What, upon the whole, I wish to impress, with respect to mercury in consumption, is, that, under the circumstances which I have just stated, it will be productive of advantage—while, in such as is caused by tubercles, or even by an extensive abscess, it is eminently mischievous. In the former of these cases especially, it seems uniformly to operate as a poison, breaking down, as it were, the fabric of the constitution, and accelerating with frightful despatch the fatal issue. During the season, when such sanguine expectations were indulged of its powers over this formidable disease, it was indiscriminately resorted to in all cases, without the slightest regard to circumstances. The consequence was, that the practice gradually declined, and is now too much neglected.

Of the use of mercury in acute rheumatism, I have not much to say. It seems to be sufficiently admitted, that it should be tried in most cases of the disease which prove intractable to the ordinary depletory measures. Exactly as in pneumonic inflammation, we resort to the union of calomel, opium, and ipecacuanha. The propriety of a salivation, however, in this disease, is disputed. By Clarke, who has written on the diseases of long voyages, we are told, that, though mercury was otherwise of the greatest service, it never failed to aggravate and protract the complaint when it touched the mouth. This opinion, however, if not peculiar to the

writer who advances it, is certainly not confirmed by general observation and experience.

I have often salivated in rheumatism, with very marked advantage, and such is the course pursued habitually by our very best practitioners. Cases, indeed, of the disease do sometimes occur, which will not yield till the mouth becomes affected, and, to accomplish a radical cure, the mercurial impression must be sustained for a very considerable period. Beneficial, however, as it is in the acute, still more so does it prove in the chronic, form of the disease.

To salivate in syphilitic rheumatism is a plan generally pursued. No one can doubt its propriety where there is really a remnant of syphilitic vitiation. But I cannot help entertaining the conviction, that such cases are of much rarer occurrence than is generally imagined. What is usually so denominated, I believe, for the most part, to be purely a mercurial affection, brought on by the profuse and indiscreet employment of the medicine. Whether my theoretical notions on this subject be correct or not, I have at least found, that such cases are infinitely more manageable by a different system of treatment, substituting in the place of mercury, sarsaparilla, &c.* Yet I do not mean to convey the idea, that in the rheumatic

* It is stated by Scudamore, certainly one of the best writers on this disease, that, in the variety of rheumatism induced by an exposure to cold, while under the influence of mercury, the most effectual, and indeed the only certain cure, consists in a recurrence to a well conducted course of the medicine. In this opinion I do not concur.

affections following syphilis, we are never to resort to this article. My object is merely to enjoin some degree of caution and discrimination in its use under such circumstances.

Mercury is found beneficial in certain forms of ophthalmia. Its utility is now acknowledged, when the complaint originates in venereal contamination. But, independently of this, the eyes are subject to very protracted and obstinate inflammations. The cases to which I allude, are usually attended with considerable uneasiness of the head, and particularly with pain, often exceedingly acute, over the orbit of the eye. Examples of such affections I have repeatedly witnessed, which, after continuing with unabated violence for many weeks in succession, resisting the most active remedies, such as general and topical bleeding, purging, and blistering, have, at once, given way to a very slight salivation. Cases of this description are generally of a rheumatic nature. The utility of the remedy does not stop here. To remove opacity of the cornea, whether dependent on a strumous condition or otherwise, it is found equally effectual. The mercurial practice in iritis, however induced, has been for several years fully sanctioned, though it is more peculiarly adapted to the venereal cases. Much more might be added in a formal disquisition on the subject.

To have recourse to mercury sometimes becomes necessary in hæmorrhages, and particularly in hæmoptysis, which will not submit to themilder measures. The impression on the mouth by a salivation

invites morbid action from the lungs, and, by the general and revolutionary operation of the process on the system, it may entirely supplant the disease, substituting its own peculiar action in place of it. Nor am I aware that it is less effectual in uterine hæmorrhages, though, perhaps, it is not so often employed. The cases in which it proves most serviceable are those irregular discharges of blood which take place at the period of the cessation of the menses, or sometimes at a much more advanced age, which, though they may arise from the mere relaxation of the vessels of the womb, are more frequently caused or associated with a tendency to scirrhus. Combined with cicuta, and aided by a milk diet, these cases, if not too far advanced, will generally submit to this medicine.

Mercury has not been neglected in the profluvia, and especially the bowel affections. Its superior powers as an evacuant in obstinate constipations, from whatever cause proceeding, are well known. Besides its efficacy in the ordinary spasmodic constrictions of the intestines, it is said to be effectual in colica pictonum. Clarke advises that fifteen, twenty, or thirty grains of calomel be given at a dose, and states, that, when thus exhibited, it hardly ever fails to open the bowels and remove the disease. But, in a later tract on this subject, of very great merit, by Clutterbuck, calomel is directed in small and repeated doses, with a view to salivation. Each of these modes of employing the medicine may be service-

able, though adapted to very different stages of the disease. The first is calculated at once to break the force of the attack, by overcoming constipation, and the second to subdue any lingering affections which may remain. My plan of treating colica pictonum has been so recently mentioned,* that I shall, in noticing the subject here, merely remark, that when it proceeds from lead, which is by no means the only cause of it, I know nothing that so effectually removes the paralytic affections, and other consequences of the disease, as the mercurial impression.

As a part of the treatment of dysentery, mercury has long been deemed very important. Cleg-horn, who acquired so much reputation by his work on the diseases of Minorca, gave six or eight grains of calomel, with one of opium at night, to be purged off the next morning. I have already mentioned† the advantages derived from large doses of opium and calomel in those obstructions of the bowels dependent on spasm: and it is quite conceivable, that, on the same principle, such a combination might sometimes have the same effect in dysentery.

But, useful as he found this combination as a purgative, he was ultimately convinced of the superior efficacy of salivation in these cases. This taking place, he even asserts that a cure invariably followed. The practice was nearly as successful in the hands of Lind,

* Vid. Cathartics.

† Vid. Cathartics, opium, &c.

in the West, and was found highly so by Balfour, and Yeates and Maclean, in the East Indies.

Having in another place detailed my mode of managing this disease, I have now little to say. Combinations of calomel, ipecacuanha, and opium, with a view of quieting irritation and determining to the surface, have, at all times, been a common prescription of mine. To this I shall only further remark, that in protracted or chronic dysentery, I have frequently salivated, and found it sometimes the only means by which I could effect a cure. Yet, in the acute forms of the disease, I should presume that it can hardly be expedient to resort to this unpleasant alternative—though, it is probable, that whenever salivation is excited, it will have a beneficial tendency.

This remark is applicable chiefly to the disease as it appears in this city. No doubt, in warmer climates, as in the East and West Indies, and in the southern sections of our own country, where the hepatic system is deeply implicated in this and in most other affections, the mercurial treatment is much more frequently demanded.

To this point we have the concurrent evidence of several of the recent and more authoritative writers. “In the second stage of this disease,” says the justly celebrated Johnson, “when the previous increased action has ended in congestion, nothing can be more useful than to saturate the system with mercury. It does more to resolve irritative fever, to equalize the circulation, disgorge the capillary vessels, restore the

balance of the nervous power, and open the sluices of the various healthy secretions and excretions, than any other remedy with which I am acquainted.”*

Dysentery among us is an inflammatory affection, calling, in the first instance, for the prompt and free use of all the direct depletory measures. To this general character of the disease there is one exception. In our poor and depraved classes of society, it now and then assumes the typhoid state, and such is generally the case when it breaks out in crowded and ill-ventilated apartments. Depletion, under such circumstances, cannot be urged to any extent, and I have early put the system under the mercurial impression, with great effect.

Mercury, as a resource in diarrhœa, should not be overlooked. Cases of a lingering and obstinate nature I have repeatedly seen yield to this remedy. It is, indeed, almost indispensable where indications exist of derangement in the chylopoietic viscera: and even if this be not the case, it proves of service by instituting a new set of actions in the intestines.

Calomel should be here given in the small dose of a half or fourth of a grain, repeated every two or three hours, and sometimes with opium and ipecacuanha, in correspondent proportions.

To excite the portal circulation in the commencement of cholera morbus, where, as often happens, the

* Johnson on the Influence of Tropical Climates.

liver is torpid, and the secretion of bile deficient, large doses of calomel are found singularly serviceable. In a directly opposite or excited condition of the liver, this medicine is also prescribed, in very minute quantities, to allay irritation, and correct as well as repress the morbid bilious discharges.

This practice is no less suited to cholera infantum. We commence under similar circumstances of the disease, with the free use of the medicine, and subsequently limit it, with the same views. The fourth, sixth, or eighth of a grain of calomel, with a modicum of opium, repeated at short intervals, will prove sufficient for the purposes intended.

Much credit has been accorded to Dr. Ayre, by the European critics, for having introduced this practice. It is very remote from my intention to derogate from the merits of the work in which it is contained. Yet, in justice to ourselves, I must say, that it has immemorially existed among us, and may be found recorded in the writings of the late Professor Miller of New-York.

Mercury is prescribed in dyspepsia nearly on the same principle. No inconsiderable number of the cases of this complaint which have come under my care, could be traced to some visceral derangement, and commonly of the liver. On the utility of mercury here, no one will dispute. But there are some other instances of dyspepsia, which proceed from a wrong action in the stomach itself, producing a vi-

tiated secretion of the gastric liquor, sometimes acid, or otherwise exceedingly disordered. These cases are moreover denoted by a loaded tongue, and occasional gastric distress. Minute doses of mercury alone, or in conjunction with ipecacuanha and opium, after thorough evacuations, I have known to redress the mischief, and perfectly re-establish the healthy condition of this viscus. My ordinary prescription is five grains of the *blue pill*, every other night, to be worked off, if necessary, by some laxative, the next morning.*

To these ordinary forms of dyspepsia, I am now to add a case, which has not hitherto attracted sufficient attention. This I have reason to believe depends on a slow species of inflammation of the stomach. It is so often met with in intemperate people, that, at one period, I thought it was occasioned only by the vicious habit of drinking. But having since remarked it in persons against whom no such suspicion could attach, I could no longer entertain the impression.

Cases of this sort may be distinguished, by sensations of heat and pain in the stomach,—by tenderness on pressure of the epigastrium, and by a pulse hard, corded, and quick. There is also, after a while, an irregular, diminutive, hectic fever, with suffusions of the cheeks, a hard dry cough, uneasiness in the side, and some wasting of flesh and strength. This con-

* For a full account of this practice, let the works of Mr. Abernethy be consulted.

dition, in short, has so many of the aspects of the incipient stage of tubercular consumption, as to be very readily confounded with it. It differs however from it in this among other respects, that there is great depression of spirits, loaded tongue, costive bowels, and constant gastric distress, with sallowness of complexion. This I have sometimes known very speedily to produce pulmonary disease of the most serious character. An irritation of the stomach, long continued, will sympathetically extend itself to the lungs, whether it be from sordes, worms, indigestible substances swallowed, or any other cause. Cases illustrative of this principle have been repeatedly recorded, and must have come under the notice of almost every practitioner.

As might be supposed, from the nature of the disease, venesection is an important remedy. Bearing in mind the peculiarity of the pulse in the gastric affections, we are not to withhold the lancet, in this case, because it may not be very distinctly indicated. But here, as well, perhaps, as in all other chronic inflammations, small and repeated bleedings are found to answer best. To the same end, minute doses of ipecacuanha, so minute as not even to excite nausea, may be employed. Given in this mode, it seems to act as an alterative, changing imperceptibly the state of the stomach. But this failing, mercury may be added, or used alone to the point of moderate salivation, which, with a blister to the epigastrium, and

a duly regulated diet, I have found generally to succeed.*

Touching the use of mercury in peritonitis, I have little to remark. The acute form of the disease, so far as I know, has never been so treated under any circumstances. Yet when we recollect its vast power over membranous inflammation, as is more especially illustrated in pleuritis, we ought perhaps not altogether to disregard it in the violent and protracted cases. To the chronic state of the disease, complicated as it generally is, with visceral derangement, adventitious adhesions, extravasations, and effusions, it forms, either alone or variously combined, the chief treatment, though it does not promise a great deal—these cases proving, for the most part, incurable.

Of the class of neuroses, there is, probably, no case in which mercury has not been used and even extolled. As relates to epilepsy, I cannot say much of its powers. I have seen it tried in a large number of instances, and with little or no advantage. Yet it is said, by some practitioners, to have effected cures, or that it at least mitigates symptoms, and suspends the paroxysms. I confess that I have derived no such effects from it, and, after sufficient experience, I am half disposed to reject it altogether in this disease. Epilepsy is undoubtedly sometimes occasioned by effusions of water into the ventricles of the brain, and

* Dr. Wilson Philip has described this disease with much accuracy, in a late work on dyspepsia. It had, however, attracted my observation long before I met with any account of it.

a salivation is particularly commended under such circumstances. But desperate indeed must be the case which proceeds from this cause! These remarks are nearly as applicable to chorea.

Tetanus depends on a variety of causes, and requires some diversity of treatment. Excited by a constipated state of the bowels, it submits very readily to active evacuations—and mercurial purges, under such circumstances, are useful. But in symptomatic tetanus, or in that originating from wounds, or other injuries, I do not know that mercury is of the least service. The progress of the disease here, is for the most part so rapid, that, long before it can take possession of the system, death ensues. Yet its efficacy is attested by many writers, and as its use, particularly in the shape of frictions, cannot interfere with other remedies, it may be retained in the management of this disease. The cases recorded of its success have been, I suspect, mostly of the idiopathic species, brought on by exposure to cold or moisture, which partaking of the nature of rheumatism, I have found exceedingly manageable by purging, &c. Nothing can be more erroneous than the opinion advanced by a late writer, of the identity of these two forms of the disease, and of their equal curability, or nearly so, by similar measures.* No two diseases, having any external resemblances, differ more widely.

* Morrison on Tetanus.

As a preventive of traumatic tetanus, mercury may be more serviceable than as a cure of the disease. To fulfil this indication, the wound is to be dressed with strong mercurial ointment, and small doses of calomel exhibited internally. This course is pursued by some in the East and West Indies, and it is reported by Clarke, to be attended with success.

Highly as mercury has been celebrated in hydrophobia, I do not think it necessary to enter much into detail on the subject. Medical opinion seems now to be pretty well made up as to the impotency of this and all other medicines in the prevention, as well as the cure of this most intractable disease. As a prophylactic, nothing can be trusted except a complete excision of the inoculated part—and, in regard to the cure, we have not a single remedy, as I have before more than once said, in which the slightest confidence can be reposed.

Believing, as I do, that the disease consists in a tribe of associated motions, the primary link of which commences at the original seat of irritation, I am thoroughly persuaded that the extirpation of the part at any period prior to the accession of the attack, would prove as effectual as if it had been done when the bite was inflicted. Nor, indeed, do I know whether the same operation on the first signal of the attack, might not avert the further progress of the disease, precisely in the same way as the removal of the irritation of the wound puts an end, in some instances, to the

series of convulsive motions which constitute tetanus. It ought, however, to be practised as early as possible, for the consecutive trains being once established, they then become independent of the original irritation, and cannot be subverted. What is more preposterous than the common opinion, that the virus, in this case, enters the circulation, and in this way produces its effects? All diseases, as is more strikingly illustrated in such as are propagated by inoculation, commence at a point, and are extended through the medium of sympathy or association, till more or less of the whole system is brought into participation, producing what is called a constitutional affection. Do we not arrest altogether lues venerea by the destruction of chanere, though the latter may have existed for many days? and are we not equally apprised of the fact, that the same thing happens with respect to vaccination? The above suggestion is at least deserving of attention. Nor should a failure or two discourage from further trials, since the same has happened with the operation when instantly performed, though in the general result successful.

To the nervous or spasmodic affections already enumerated, in which mercury is commended, may be added tic doloureux, dysphagia, gutta serena, and several others that do not require to be particularly detailed. In the first of these cases, it has, probably, lost nearly all its reputation. But instances are recorded by Percival and Munkley, of its success in the second, where deglutition was exceedingly diffi-

cult and embarrassing.* Exhibited for a long time as an alterative, and afterwards urged to salivation, it is sometimes productive of very great advantage in the last complaint. But this state of the eye is dependent on such a variety of causes, that our practice must be tentative, and, of course, exceedingly precarious. It is true, that Mr. Ware, the celebrated oculist, asserts, that mercury is chiefly useful in those cases accompanied by a very contracted pupil, which he considers as most probably occasioned by an internal inflammation. Whether such are readily to be distinguished, I will not pretend to decide. It may be collected from what I have said, that though I do not repose much confidence in the powers of mercury, in some of the more formidable of the neuroses, still, where any of the class can be traced to a sympathetic connection with a disordered condition of the digestive apparatus, it holds out, I think, the best prospect of success, and should never be neglected.

Having already expressed my views of the theory and treatment of apoplexy and palsy, I shall now dismiss these subjects, with a single remark. In the former of these diseases, while it retains its proper character, I am not aware that mercury, except as a purgative, promises to do much. But when it glides into the latter, a salivation, as in primary paralysis, sometimes proves of great use, and the more certainly so, if slowly and cautiously excited.

* Trans. of College of Physicians, London, Vol. I. and II.

To treat mania by the mercurial medicines, if not an American practice, is certainly much more prevalent among us, than in Europe. It is one, at least, to which the medical men of this city are extremely devoted. Yet, I do not think that we have determined, with sufficient precision, the cases to which it is best suited, and hence the results of our experience are very different, and even contradictory. It is resorted to in each form of mental derangement, as well in furious mania as in melancholia, and, perhaps, with nearly equal success. All that is particularly attended to in the employment of the remedy is, to see that the system is properly reduced, by bleeding, purging, and other evacuations, *to the point of salivation*. This being premised, mercury, unquestionably, will often effect cures under circumstances apparently the most discouraging. It is, in short, a principle with most of our practitioners to appeal to this as a resource in all cases of insanity, which have pertinaciously resisted other modes of treatment, and, though this may be empirical practice, it is fully justified by the frequency of its success.

That the utility of mercury in the mental affections may in part be ascribed to its general powers over disease, seems highly probable. But I cannot help entertaining the conviction, that it does infinitely more good by specifically acting on the chylopoietic viscera, correcting the derangement in this system of parts, which would seem to be the cause, in very many instances, of the morbid states of the mind. Extraor-

dinary as this *location* of insanity may appear to such as have not contemplated the subject, it neither wants the support of authority, nor the evidence of analogy, or of positive facts. It is now pretty generally conceded, that the whole class of neuroses is very frequently of gastric origin. Considering the close affinity which exists in the physiology as well as pathology of the nerves and brain, it is surely no great stretch of generalization, to embrace within the same view the two sets of cases.

Can it be denied that the cerebral and mental disorders are frequently induced or imitated by impressions on the stomach and its dependences from the narcotic poisons, worms, and other causes? Every practitioner of much experience has probably seen this repeatedly illustrated in apoplexy, palsy, hydrocephalus, cephalalgia—in the depravations of vision, and in mania, melancholia, and hypochondriasis, all which is abundantly confirmed by dissection.

It had long been a matter of surprise with pathologists, that, in the diseases of the mind, the morbid appearances of the brain should be so few and slight—sometimes, indeed, none whatever existing, even though the case were furious mania. Being conducted under the predominant notion that the brain must necessarily be the seat of these affections, examinations were rarely extended beyond this organ—and, consequently, the real source of mischief continued unrevealed. But of late, the cultivators of morbid anatomy in Europe, have thrown a very clear and dis-

tinct light on this subject, demonstrating incontestably, that we are to seek in the chylopoietic viscera for the causes of many of the nervous and mental complaints. The facts thus developed, have laid the foundation of a correct pathology with respect to this interesting set of diseases, and will, no doubt, lead, as has been in part accomplished, to a more exact and successful mode of treatment. But, while I maintain generally, the connection of these cases with certain disordered states of the abdominal viscera, I am not disposed to deny, that they may take place as idiopathic affections of the cerebral and nervous systems.

As to the utility of mercury in the complaint denominated hydrocephalus internus, medical opinion does not seem so decided. There are some practitioners who believe, that neither this nor any medicine is of the slightest service—while others more sanguinely maintain, that by a proper perseverance in a mercurial course, it proves very manageable. It is manifest, that these contradictory accounts proceed from the opposite views entertained of the pathology of the case.

The disease improperly considered as a dropsy consists in an increased and altered action of the vessels of the brain, producing an effusion of water into the ventricles, or some derangement in its organic structure, from the continuance of morbid impressions on it. Now, it is very obvious, that our success will be different under these opposite circum-

stances. Attacking the disease, we shall most generally cure it, however we may be baffled in our attempts to remove its effect.

Of course, it would be wrong to resort to mercury in the incipient or early stages of hydrocephalus. The treatment, at this period, ought to consist of venesection, very copious purging, and the application of cups, leeches, and blisters to the head, with a most strict adherence to the antiphlogistic plan in all its parts. By pursuing such a course steadily, the disease will very often be arrested. But it is worthy of particular recollection, that it is by no means rare, at the expiration of ten or fifteen days, where the case has advanced rapidly, for the more violent symptoms to subside, so as to induce an expectation of a speedy recovery. This is sometimes a most treacherous and fatal calm, as it results from effusion having taken place. The vessels, previously much excited, are in this way relieved, and the attack is completely suspended. After a short interval, however, the extraneous fluid acts as a re-exciting cause, and the disease returns with redoubled force. Under such circumstances, the case may be considered as desperate, or nearly so.

Though effusions into other cavities may be taken up, experience teaches that it rarely happens in these cases. Except Mascani, no one has pretended to have detected absorbents in any portion of the brain, and, by many, their existence, even at the present day, is denied. But, surely, their not having been satisfacto-

rily ascertained, is owing to the imperfection of our anatomical researches—as the phenomena of growth, not to mention other facts, sufficiently attest that they must belong to every organ and part of the animal machine.

An absorbent is as necessary an ingredient in the composition of a living body, as a blood-vessel, each being indispensably necessary to the execution of its primary and most important vital functions. Even admitting, however, the existence of lymphatics in the brain, still it is not less true, that they act very feebly and incompetently in the hydrocephalic affections. Yet, on this account, we should not be discouraged from urging the use of mercury in these cases. By the common consent of practitioners, it seems now to be conceded, that no plan of treatment holds out such prospects of success. Even where effusion has not taken place, it is serviceable by changing the action of the vessels, and diverting the complaint from the head. But, if water exist, it is the only remedy entitled to the slightest confidence.

To be effectual under such circumstances, mercury must be applied in a very bold and decisive manner. It should be exhibited in as large a quantity as the stomach and bowels will bear, and externally applied in the shape of frictions, with the strongest ointment, most diligently and copiously. To do less than this, in these desperate cases, is to trifle with the remedy, and to cut off the only chance which the patient has of escape.

I have before remarked, that the proximate cause of this disease is an increased and altered action of the vessels of the brain, and that the effusion is merely the effect : I now add, that it is not a uniform one. By a writer of great intelligence, it has, indeed, been recently held, that the effusion, so far from constituting the disease, is neither the principal, nor even the accessory cause of death in the case : on the contrary, that it operates to the protraction of life, by imparting to the brain a certain degree of tone and support, which, under such circumstances, it would lose. Whether this is only a plausible hypothesis, or really the fact, I will not take upon myself positively to pronounce. Certain it is, however, that water will continue in the ventricles, or, at least, we have every reason to suspect its existence, in some instances, for weeks, months, or years, without destroying life.

But, though I place the proximate cause of hydrocephalus in a morbid action of the brain, I am not the less persuaded, that, in a large majority of cases, it commences in a disordered state of the stomach, or some one of its dependencies. To this conclusion I am conducted, by the well-known association which exists between all the parts, and by various considerations which may be deduced from the history of the disease, such as the great disorder observable in the chylopoietic viscera, sometimes for weeks before the appearance of hydrocephalic symptoms—the removal of these symptoms by purgatives, and other remedies directed to the alimentary canal—the

extreme tenderness felt in the regions of the stomach and liver—the obstinate constipation at this period—the peculiarity in the stools, indicating extreme vitiation of the biliary secretion, and the phenomena exhibited on dissection, proving the previous existence of no slight disease in most of the abdominal contents, and especially in the stomach and liver, and sometimes none at all in the brain.*

Certain cases of cachexiæ, are sometimes treated with mercury, and among these is dropsy. The pathology of this disease continues unsettled. The only fact, indeed, which seems to be admitted by the parties, in the discussion on the subject, is, that it arises from the destruction of that exact balance, which exists in health, between the processes of exhalation and absorption. Every one who is at all instructed in physiology, knows, that, when the system is in a sound and undisturbed condition, a watery fluid is constantly poured into every cavity or interstice of the body, and that, without being permitted to accumulate to any extent, it is taken up by the lymphatics, and disposed of in a way which it is not necessary for me to explain. It hence appears, that dropical collections may take place, either by an excess of effusion, or from some decay or imperfection in the powers of absorption. The question, however, here presents itself—which is the more common

* I have just received from my friend, Dr. Yeates, of London, a small tract on this disease, in which I am proud to find a perfect coincidence in our views.

source of the disease? Consulting the lights of my own experience, aided by those general reasonings which never fail to influence, more or less, our opinions, I should say, that dropsy of every description, consists, in a large majority of instances, of preternatural effusion. Conceding, however, so much, we must still seek for the immediate, or real cause, of the disease, in a state of things preceding this event. The very existence of such an accumulation of water, pre-supposes a derangement of function,—since, without some morbid change, it could not happen. It is, indeed, in this way, that the arteries, when unduly excited, commonly relieve themselves, and where the discharge of serum is thrown out of the body, as by urination, the cure is complete. But, unhappily, this does not often take place, and the effusion being confined in cavities, or elsewhere, operates, as an extraneous irritant, aggravating the previously febrile condition of the vessels.

The case of hæmorrhage, is a parallel one, and serves as a very pertinent illustration. Nature, under similar circumstances of vascular exacerbation, from plethora, or other causes, very often resorts, as a remedy, to the rupture of a vessel, and with the same degree of blindness. Coming from the nose, or the rectum, the loss of blood is often productive of immense utility—while equally, or even more mischievous, than the hydropic effusions, does it prove, should it be directed into one of the cavities of the body.

Most European writers, till lately, have maintained, that dropsy is a complaint having its origin in debility, and associated, in all its stages, with what they denominate a *laxity* or *cachectic* condition of the system. But we, on the contrary, acting on another view of the nature of the disease, have, perhaps, proceeded too far, and here, as probably in most other instances, truth will be found in a medium between the two extremes.

Dropsy is, unquestionably, connected with opposite states of the system, and exacts for its cure different plans. No one can deny, that it is often a febrile affection, attended with fulness and activity of the blood vessels. Nor is this any new discovery or estimate of the disease. Exactly such a view of its pathology, is laid down by Stahl, in his chapter on hæmorrhages, and may be met with in several of the German and French writers, among whom Grapengiesser and Botellus may be named particularly. But, it is also a disease of very feeble action, proceeding from mere relaxation, or a disordered state of some one of the principal viscera—as, the liver, the spleen, or stomach, or pancreas. No point is less disputable, than that effusion takes place in very opposite circumstances. Either excited or enfeebled vascular action, equally produces the effect. To do away fulness or congestion, nature is always disposed, as a salutary expedient, to produce a hæmorrhage, or to throw off the more watery parts of the blood—and, in conditions of exhaustion, her

powers being impaired, or destroyed, she is unable to resist these morbid processes. It is thus, that we have hæmorrhages in the advanced stages of low fevers, and dropsical accumulations, under similar circumstances, in consumption, and other diseases of extreme debility. Those, therefore, who endeavour to comprehend, under one generalization, the several modifications of dropsy, take a very limited and imperfect view of the subject, and are guilty of such an error in pathology, as must unavoidably lead to a most destructive system of practice.

Elsewhere, I have dwelt with the strongest emphasis on the powers of mercury in hydrothorax.* Combined with the squill in the proportion there stated, it does, indeed, so often prove effectual in this disease, as almost to exclude it from the catalogue of the reproaches of our art.

To ascites and anasarca it is also well suited, though not so conspicuously as in the accumulations of the chest. These varieties of dropsy, however, often arise or are kept up by visceral obstructions, and, whenever this happens, mercury is indispensable to the entire removal of the complaint. Nor, perhaps, does it do less good, in some instances, by arousing the action of the lymphatics, a system of vessels on which much of its power is usually expended. Yet, it must be confessed, it often disappoints our expectations—and that the cases to which it is applicable, have not

* Vid. Diuretics.

hitherto been accurately designated. To me it has always appeared to be alike inappropriate to febrile or inflammatory, and to the weak and leucophlegmatic dropsy—and certainly so if the latter be associated with any scorbutic or strumous contamination, mercury always acting hostilely in such depraved habits. Dropsy, with some degree of tone and soundness of constitution, is the case in which mercury operates most beneficially, though even here it should not be resorted to, till vascular action is pretty well reduced by venesection, purging, &c.

The mercurial practice in this disease, is of a remote date. It is expressly laid down in the writings of Sylvius and Van Helmont, as well as in those of some of their cotemporaries and immediate successors. Gremb, who wrote in 1657, alluding to it, says, that the medicine was urged “*usque jam salivatio oris superveniat.*”

Of the remedial powers of mercury in cutaneous diseases, every one has heard. Exceedingly numerous as these affections are, there is hardly one in which it is not prescribed. Its success, however, is very variable, and, on the whole, we may consider it, in most of them, as a precarious remedy.* But it often happens, that when it fails, given internally, it will answer if applied directly to the surface in the form of an unguent or wash. This is especially the

* It is remarked by Willan, in his work on the diseases of the skin, that, if he could only point out the proper application of mercury in these complaints, the end of his labours would not be entirely lost.

case in itch. Though no quantity of mercury taken internally will remove the complaint, or even make any very sensible impression on it—used in the way I have mentioned, it is very effectual. Whoever has attended much to hospital practice, where cases of psora and syphilis are to be met with in the same person, must have seen this repeatedly exemplified.

No diseases are so unmanageable by constitutional remedies as those of the skin, and particularly of the cuticle. This proceeds from their being seated at the extreme verge of the system, and in a great degree removed beyond the circulation, and the agency of the vital powers. Disease is violent, though curable, provided we graduate the power of our remedies to the vehemence of the case, exactly in proportion to its vicinity to the great organs which sustain life.

In the exanthematous, or acute affections of the surface, except as a purge, mercury has entirely lost its reputation, not being now used even as a preparative to the small-pox, the purpose for which it was longest retained. It is still, however, directed in some of the chronic cases, though, as I have just mentioned, not with much certainty of success. Of course I do not include the venereal eruptions in this remark.

Considering the analogy between lepra and some of the diseases in which mercury is advantageously prescribed, we might presume it would be adapted to it. Little confidence, however, seems to be reposed in it by those who have had opportunities of making the trial. It is stated, that, though for a time it arrests the

disease, it hardly ever fails to relapse in an aggravated shape. Yet, in elephantiasis, which is probably a species of leprosy, we are told, that the best treatment, in the second stage, consists in mercury and the stimulating diaphoretics. Of these diseases, I have seen too little to advance any opinion relative to the practice to be pursued in them.

In relation to this remedy in scrofula, there is some difference of opinion. Cullen tells us, that he has never found "mercury or antimony, in any shape, of service in the disease." But he certainly depreciates the article, as later experience has sufficiently shown. Copious purging with calomel, where the bowels are constipated and loaded with foul accumulations, is very serviceable in the commencement of scrofula. Being, however, merely torpid, it is better practice to give the blue pill at night, and purge with some gentle cathartic in the morning. Minute doses of it or corrosive sublimate, variously combined with the narcotics or tonics, as the case may require, are prescribed with advantage in the advanced stages of the disease, to discuss tumors or resolve indurations. But with this view it requires to be continued for several weeks, or even a longer time, and so managed, as to attain its alterative without its salivant effect, the latter always proving, when fully established, very mischievous. Of scrofula, however, we have little in the United States, as it never originates among us. The cases occasionally met with are confined to foreigners, or their immediate descendants. The plenty and com-

fort of our happy land allow not of its production, and soon eradicate any hereditary tendencies to it.

I have already said something of the value of mercury in the glandular affections. As commonly seated in structures of this sort, it is right that I should make a remark or two on scirrhus and cancer. But these are subjects coming more immediately within the province of surgery, of which I have little knowledge. It appears, from the older writers, that mercury, among a variety of other remedies, was much used in these cases, and, though we are not without some facts of its occasional success, its reputation, at least in open cancer, is entirely gone. The present opinion seems to be, that it rather aggravates than relieves the disease, though it is still admitted to be useful in the discussion of scirrhus tumors, in that stage of simple obstruction which precedes the alteration of structure or organization. With this view it is given in small doses, and applied in the shape of frictions, or of a plaster, to the tumor. Much might be said of the mercurial practice in ulcers generally. To do justice, however, to this subject, requires more surgical skill and discrimination than I possess, and therefore I decline it.

The use of mercury in the venereal disease has been so ably and fully discussed by many distinguished writers, that it would be superfluous in me to engage in any elaborate disquisition relative to its applications. My design is merely to call attention

to one or two remarks, which I deem of some consequence.

In the universal terror once excited by this disease, practitioners were disposed to suspect almost every disordered appearance of the genitals, or neighbouring parts, as having its origin in venereal contamination. This solicitude has unquestionably been the source of much mischief—and, as still prevailing to a considerable extent, the same consequences daily arise from it. Contrary to a very general impression, I am entirely persuaded, that syphilis, as well as the other form of the disease, is of very rare occurrence, so much so, indeed, that I believe a large proportion, perhaps nine-tenths, of the cases in which I am consulted, with the venereal aspect, are really not of this nature.

In all warm climates particularly, the secretory surfaces of the organs of generation are apt to take on a morbid state, by which the discharges become depraved, and often extremely acrid, excoriating the parts, or otherwise producing ulcers, so nearly resembling the true chancre, as readily to be confounded with it, by one who is hasty in observation, or possessed only of a narrow and imperfect experience.

By consulting the medical writers of antiquity, and especially Celsus, we shall find an interesting record of a great variety of affections of the genital system, which, in many leading circumstances, are analogous to venereal cases. The Old Testament itself also furnishes us with the same species of evidence. The

ancient inhabitants of the east were exceedingly subject to such complaints—and there can be no doubt that the practice of circumcision, like many other parts of the Mosaic code relative to the preservation of health, was instituted to prevent these very diseases, and that, in order to add solemnity to the observance, it was interwoven with the existing system of religion. This end is attained in the removal of the prepuce, as well by avoiding the entanglement of the virus in the folds of the membrane, as by the greater consistence which is given to the texture of the surface.

The ulcers to which I allude, or some of them at least, commence like chancre, frequently run the same course, and are productive of very similar effects. Cases have occurred to me, where, from negligence, or improper treatment, or great malignity, the ulceration has assumed a very alarming aspect. I have seen it extend its ravages so as rapidly to eat away the prepuce, or make a deep excavation in the substance of the penis, with a smooth surface, or irregular and unhealthy granulations.

Though this differs most essentially from the venereal disease, as is shown by its exacting a different treatment, it still so closely resembles it in its general characteristics, as even to exhibit not a few of the constitutional affections. Many times I have known this description of sores produce swellings in the groin, followed, or, as may happen, preceded, by diseased throat, by copper-coloured blotches,

or eruptions on the surface of the body, and ultimately by consequences still more serious.

In a recent work, by Mr. Carmichael, a distinguished surgeon of Dublin, my views on this subject are entertained, and even carried to a greater extent than I have hitherto ventured to do. Without descending to details, in which it would be improper to indulge, I may, perhaps, convey his opinions in a summary or general statement. This very original and sagacious writer maintains, that there are at least three distinct poisons, which, operating on the genital organs, produce primary local symptoms, followed by secondary constitutional diseases.

1. The *sypilitic*, characterised by chancre, succeeded by a scaly eruption, which he considers as the only species caused by venereal contamination.

2. The *gonorrhœal*, characterised by a superficial ulcer, destitute of induration, and of elevated and re-torted edges. The virus of gonorrhœa, he also alleges, occasions severe excoriations of the prepuce and glands. What is more peculiar in his notions on this point, is, that while he insists on the total difference in the nature of the two diseases, he avers, that gonorrhœa is sometimes followed by constitutional affections analogous to those of lues, such as nodes, pains in the limbs, cutaneous eruptions, which last, however, instead of being *scaly* as in syphilis, are *papular*.

The *third poison* is characterised by a primary sloughing ulcer, which is often phagedenic from the

commencement, and is followed by a pustulous eruption, and a train of constitutional affections.

Mr. Carmichael does not seem exactly to understand either the nature or source of the virus, which causes this third species of disease. My impression is, that it is derived from the morbid secretions, which I have already noticed. These, as I have frequently observed, will occasion such ulcerations, and which, as he has also stated, are described by the writers of antiquity.

Depraved secretions, however, are not confined to the genitals of the male. The vagina is very apt to take on diseased action, and to throw out virulent and corrosive discharges, which severely affect the male organs. I know an individual whose wife has for some years had a species of leucorrhœa, with whom he can never have connection, without inducing a most inflammatory gonorrhœa, often attended by excoriation, and considerable ulcerations. Lately I had him under my care, when, to other symptoms, was added a very frightful phymosis: and, on the subsidence of the tumefaction, I discovered, on the crown of the glans penis, a deep phagedenic ulcer, which, before it could be arrested, did immense mischief to the parts. Nor is this, by any means, the only case which I have seen, though never to the same extent. That such affections may proceed from foul prostitutes, wholly independent of venereal infection, has been shown by Mr. Abernethy, and several other of the English writers.

In each of the syphiloid, or imitative diseases, Mr. Carmichael, entirely excluding mercury from the general treatment, trusts the cure chiefly to antimony, sarsaparilla, and its kindred articles. The local applications he employs are, lotions of the muriate or submuriate of mercury in lime water, a grain of the former, or ten of the latter,* being added to the ounce. As a wash, the compound spirit of lavender, alone or diluted, he also recommends.

In my own practice, I have found nothing to answer so well, on the whole, in the various stages of this ulcer, as a solution of the sulphate of copper, graduated in strength from a state of saturation to a very free dilution, according to the circumstances of the case. But it will not always avail. In such cases, I have recurred, sometimes very advantageously, where the sore was irritable, to lotions of the narcotic substances, as opium, hemlock, stramonium, tobacco, &c. These, too, proving unsuccessful, a decoction of bark, the tincture of myrrh, and such articles, alone, or in various combinations, may succeed, especially in a relaxed condition of the ulcer.

Many of these cases, however, are connected, either as cause or effect, with great depravation of the system at large, and can only be cured by a course of treatment dictated by such a view. The chylopoietic viscera are here mostly disordered, as is manifested by the usual signs—and of the influence which they

* I generally add a drachm to the ounce, and find it much more effectual.

exercise over local affections, every one seems now to be sufficiently aware. The indication, therefore, is, to correct this state of things, which is to be effected very much by the remedies most efficient under ordinary circumstances. Evacuations of the primæ viæ by emetics and purgatives, and, should there be any febrile excitement, moderate venesection, to be followed by the tonics,—as sarsaparilla, bark, arsenic, or nitric acid,—or by the narcotics,—as opium, cicuta, stramonium, or henbane—the one or the other set of articles being preferred as may seem best—constitute the practice.

Can mercury ever be used with advantage in any of the syphiloid affections? This is an important question, which I do not think, in the existing state of our knowledge, can be satisfactorily answered. European authority is divided on the point, and while, as we have seen, Mr. Carmichael condemns it, there are others, of scarcely less weight of character, by whom it is recommended, under certain limitations. My conviction is, that mercury, urged to any great extent, proves pernicious, and, in some instances, is even productive of irremediable mischief. Yet, the milder preparations of the mineral, such as the blue pill, gradually insinuated, so as to attain the *alterative*, as contradistinguished from the *salivant* effect, have unquestionably done good in my hands.

The effect of mercury depends much on the mode of exhibition. Managed cautiously, some of the cachexiæ, including scrofula, are greatly benefit-

ed by it, while, copiously poured into the system, it operates as reversely as can well be imagined. In conclusion, I shall only further remark, that the practice of Mr. Abernethy in dyspepsia, alternately giving the blue pill and purging, has succeeded with me in some of these cases, and especially where the chylipoietic apparatus required to be rectified.

Doubtful as we may be, as to the degree of confidence to be attached to Mr. Carmichael's peculiar opinions, every one must be pleased with the new views he has presented of a very complicated subject—and, perhaps, without indulging an improper enthusiasm, we are warranted in anticipating the most interesting results, by pursuing the same track of observation and inquiry. To me it seems, that they are only amenable to criticism, by exhibiting the subject in too limited an aspect. Besides the ulcers which he has designated, there are undoubtedly several other local affections, such as the simple excoriation, the herpes preputialis, and various modifications of the ulcerative process, which claim our attention.

Whether gonorrhœa itself be productive of general disease, as he represents, I am not prepared to state positively. From what I have observed, I am disposed to believe, that while the integrity of the surface is preserved, no extension of disease takes place, but, when an ulcer is formed, the system being brought into sympathy with it, we have occasionally the alleged constitutional effects. Certain it is, that, in several instances, I have witnessed a papular erup-

tion, very generally spread over the body, which could only be traced to this cause, and more than once, associated with it, ulceration of the throat.

As respects real syphilis, my own experience, which is by no means circumscribed, satisfies me, and in which opinion I am probably supported by the best authority, that, though on the whole, mercury is to be preferred to all other remedies, we most wantonly and unnecessarily extend the use of it. In ordinary attacks, I well know that a very moderate salivation suffices—and that it will always be more effectual, under such circumstances, to induce it gradually, than otherwise. The local affections may be cured by a steady perseverance in topical applications, without at all recurring to any constitutional treatment. Never have I found it necessary, in the early stage of chancre, to prescribe mercury. Between the first appearance and the extension of the diseased action to the inguinal glands, several days, and sometimes even months, will intervene. During this interval, we may safely trust to topical remedies. Believing, indeed, that the constitutional symptoms proceed entirely from sympathy with the primary affection, and that, in no instance, is the virus absorbed, I have often confided in this plan, even after buboes had taken place, and have, in succession, healed the chancre, and dispersed the swelling.

Consulted in the incipient stage of the disease, I endeavour, at once, to destroy the chancre, and so effectually, as to preclude the possibility of the general

system becoming implicated. This may be done by the proper application of an escharotic, which, converting the syphilitic into a common healthy sore, very speedily heals when judiciously treated. My practice, here, is similar to that adopted in the bites of rabid animals. By the timely interposition of the knife or caustic, we almost invariably prevent canine madness, and I am sure, in this respect, that there is not less certainty in the syphilitic cases. All diseases propagated by inoculation, or, in other words, by the introduction of a virus under the skin, are so entirely sympathetic, that if the primary irritation be arrested or changed, we also arrest, modify, or change the character of the constitutional affection.

It appears, from recent publications, that the practice of treating syphilis, in all its stages, without mercury, has been adopted, pretty generally, in Great Britain, and more particularly by the surgeons of the army. To this course they were probably led by having witnessed its efficacy in Portugal, where it seems to be almost universally pursued. Chancre they manage by lenient or irritating dressings, according to circumstances, and, at the same time require a state of rest, with the antiphlogistic regimen in all its parts: the secondary constitutional affections by a decoction of sarsaparilla and similar articles, with antimony.

Even with this defective treatment of the primary ulcer, the proportion of cases in which secondary symptoms take place, is very small, and these are

speedily and effectually cured.* The occasional failure of this plan to arrest the disease, does not, as an objection, apply to mine. It will be perceived that my proposition goes to the extirpation of the local affection at once: and where this is properly done, it must necessarily afford security against any constitutional attack. That the means I have suggested are adequate to this end, a lengthened experience fully warrants me in asserting.

Allowing, however, that this expedient occasionally fails, and the system becomes affected, where is the

* Mr. Rose has published, in the *Medico-Chirurgical Transactions*, an account of 120 cases cured without mercury in his military practice during a year and three quarters. Mr. Guthrie successfully treated 100 cases in the same manner, and had seen notes of 400 more cured without mercury in the different hospitals. Dr. John Thomson relates 155 cases similarly cured by him in the Consolidated Depot Hospital at Edinburgh Castle. Mr. Hennen has published 105 equally successful cases, 20 of which were cases of true Hunterian chancre. And in a general investigation, undertaken by the surgeons of the British army, it appeared that, out of 4767 cases, 1940 were cured without mercury. Of these, 96 had secondary symptoms, but every man was fit for military duty immediately on his dismissal from the hospital. The average period for the cure of primary symptoms was 21 days, and of secondary 36 days. The remaining 2827 were treated with mercury: 51 of these had secondary symptoms, and two men were rendered unfit for the service. The average period for the cure of primary symptoms was 33 days, and of secondary 45. The foregoing cases, it is stated, include not only the more simple sores, but also a regular proportion of those with the most marked character of syphilitic chancre. On a survey of the results it appears, that under the non-mercurial treatment, the disease more frequently advanced to the secondary symptoms—but that, on the whole, the average time of cure, both of primary and secondary symptoms, was less than it was in the cases where mercury was employed.—*Bigelow's Sequel*.

increased evil or mischief? Let the patient, in other words, return to me after a few weeks, with an ulcerated throat, and other symptoms of confirmed lues, what happens? Entertaining as I do, a conviction of the superiority of the mercurial treatment, I should instantly commence it, and with the assurance of effecting a cure as promptly, and with as little inconvenience, as if it had originally been employed. As, therefore, no more mercury is required to eradicate, than to prevent the complaint, there cannot be a comparison between the two modes of practice, as, by mine, a chance is afforded, of escaping a mercurial course in a large proportion of cases.

But I am prepared to go further, and to avow my total want of confidence in the powers of mercury to cure chancre, or hinder the contamination of the system. I have several times known a chancre take place, and extends its ravages as usual, though, at the time, the individual was fully under the mercurial impression. Examples to such effect, are by no means rare in the public institutions of great cities. Thus, we see patients, while in a deep salivation for dropsy, hepatitis, or some other complaint, contract chancre, followed by buboes, &c. Whether the disease, if not checked, would further extend itself, I do not know. It seems to me, that chancre, which is a mere local injury, is so seated on the confines of the system, that it cannot be approached, or at least very slowly, by general remedies, and must be managed with direct applications. No more, in my opinion, can we cure

it by mercury exhibited internally, than suspend the career of the vaccine or variolous pustule, or disperse a paronychia, or heal any minute ordinary sore.

Concerning the remedies, I have nothing peculiar to offer in chancre. Like other sores, its specific action being first destroyed, it is to be treated according to circumstances. I may, however, remark, that all ulcers of the penis, whether of the glans or prepuce, are disposed to take on a lax and phagedenic character more or less, and hence generally call for stimulating dressings. Lotions will sometimes answer much better than ointments.

The vulgar notion, so widely prevalent, that in lues venerea, the whole system is saturated with a virus, which must be either corrected or eliminated by mercury, has led to its most profuse use in such cases: and the consequence of this preposterous practice is, that a state of things, properly enough denominated the mercurial disease, is brought on, not less horrible than syphilis itself, and far more unmanageable.

It may be laid down as a rule, that in a very large majority of cases of what are called the secondary forms of lues, we have to encounter only the effects of the abuse of mercury. Even in the advanced stages of genuine syphilis, much less of it is required than is commonly prescribed. My practice is, to keep up a slight salivation, very gradually excited, for two, three, or four weeks, regulating the period exactly as I perceive the patient to be affected. His condition being improved, we should proceed with

the treatment till the cure is effected. But the contrary happening, or the patient becoming worse, we are to conclude that the course is wrong, and immediately to abandon it.

It is now upwards of eighteen years, since I openly promulgated the preceding opinions and modes of practice—and, though since sanctioned, or at least some of them, by European authority of the highest character, they have been commonly considered among us as heretical and unfounded. But a different fate at length awaits them. Even by many of those who formerly denounced them most loudly, their truth is at length perceived, and fully recognized.

It is notorious, such is the general reformation in this respect, that it has become very rare to use mercury in any of the affections of the genital system, and particularly in their primary states. This is so true, that I am told, by one of our principal apothecaries,* that the sale of mercurial ointment, and of the pill kept in the shops for this disease, once very extensive, has nearly ceased.

With this I close what I have at present to say relative to the application of mercury in the cure of diseases. It would have been easy to have expatiated much more fully on the subject. But I have stated its more material uses, and, perhaps, sufficiently pointed out the principles which regulate the general employment of the medicine.

* Mr. Frederick Brown.

As formerly intimated, there is scarcely any disease in which mercury may not, under certain circumstances, be advantageously exhibited. It was a maxim of a practitioner,* formerly of great distinction in this city, that in all cases where other forms of treatment fail, we should revert to it as a *dernier alternative*. By pursuing this course, he acquired immense celebrity for the number and variety of his extraordinary cures, and did more than any one else to elevate the medicine to its present conspicuous rank in the *materia medica* of this country.

Considering the universal, pervading revolutionary powers of mercury, and with tendency to set up its action in place of the existing one, whatever may be its nature, we shall not be surprised at the success of this practice, or be disposed harshly to condemn it as rash and empirical. The *Mercurialists* of Europe, as they are reproachfully termed, comprehending some of the most distinguished names of the present day, are surely pursuing to a certain extent such a course, and how generally it is done among us need not be told.

Eminently beneficial, however, as mercury may be on the whole, it sometimes, either by improper use, or from idiosyncrasy of constitution, or other causes, is productive of effects of so serious a nature as to require the best exertions of our skill. It is not to be expected, that I am on such an occasion to de-

* Dr. Thomas Bond.

liver any detailed account of the mercurial affections. Enough, perhaps, it may be for me to state, that there is hardly one form or symptom of syphilis, either in its primary or secondary stages, which these will not so closely imitate, as to perplex and confound the judgment even of the most enlightened and experienced.

By referring to the modern writers who have treated this subject, and, especially, to Mathias, Alley, Crampton, Pearson, Abernethy, and Carmichael, it will be seen that mercurial chancres and buboes are very common occurrences,—and also ulcerations of the throat,—together with all the complaints seated in the periosteum, tendons, cartilages, ligaments, fasciæ, &c. Eruptions of a very unpleasant character are also the consequence of mercurial impressions. These of late have attracted attention, and not a little has been written concerning their nature and appearance. By Alley, one of the ablest authorities, they are denominated hydrargyria,* from the source of the disease—and, as they assume different degrees of malignity, he has, for the sake of perspicuity, divided them accordingly. The cure of all these affections consists, not as is usually practised, in a repetition of the mercury. Every preparation of the sort is, on the contrary, to be proscribed, and we are to substitute a generous and nourishing diet, with whatever else has a tendency to cheer the mind and corroborate the body.

* By Mr. John Pearson, *eczema mercuriale*.

Effects, such as I have stated, are peculiar to the use of mercury in the venereal disease. This seems to be generally conceded,* though, in the explanation of the fact, much embarrassment has been experienced. I really think the explanation is very obvious. The system under the influence of *lues venerea*, is in a state different from all others, and mercury acting on it at this time must produce phenomena *sui generis*. This did not escape the sagacity of Mr. Hunter, who, however, supposed, that under these circumstances it developed only the latent action of some other disease. Do we not find mercury, in many instances, displaying peculiar modes of operation? Employed largely in any case of very depraved, or cachectic state of body, and we shall witness such modifications. But this is most conspicuously illustrated in scrofula and scurvy. As its effects are aggravated and modified when operating on the diseased condition in these cases, so is it in syphilis.

To the preceding, I may add, as more ordinary effects of mercury, inflammation, ulceration, and sometimes even gangrene of the mouth and fauces. The discovery of a remedy, or plan of treatment, calculated

* "I beg leave to observe," says Mr. Carmichael, "that I have not, nor do I believe that any other person has, witnessed ulcers on the skin and throat, and nodes on the bones, from the exhibition of the most extensive course of mercury in any other than the venereal disease, nor even an eruption, except the well-known mercurial eczema."

Edin. Med. and Surg. Journal, Vol. XI. p. 436.

to check this inordinate operation of the article, has long been desiderated. Much has hitherto been confided to active purging, under these circumstances, particularly with sulphur. My opinion, however, derived from pretty ample experience, is, that it is productive of no advantage, and I am not certain that it does not increase the mischief. Cases have come under my observation, where the mercurial action was completely developed, which had lain dormant in the system, and, by the continuance of the purging, was carried to a very great height. Even in minute doses, with a view to its alterative effect, I have never witnessed any benefit from sulphur. The only constitutional remedy from which I have derived the least advantage, is the free exhibition of opium. This, while it relieves the pain and irritation incident to the case, restrains the discharge, and checks other symptoms, by counteracting the mercurial action.*

Co-operating with this general remedy, we have some local applications, and, of these, by far the most effectual are blisters to the throat. Being, however, themselves painful and unpleasant, they are only adapted to bad cases. Gargles and washes, of great variety, are much prescribed, and, perhaps, may sometimes be beneficial. They are mostly astringent, such as an infusion of bark, of galls, of sage,

* Emetics, I have understood, have lately been employed to restrain the inordinate effects of mercury, with great advantage, by Dr. Richard Field of Virginia, an experienced and most respectable practitioner. Vid. *Phil. Med. Journal*, Vol. VI.

or lime water, the solution of borax, the diluted mineral acids, &c. The neatest of these lotions is a strong decoction of green tea, sweetened with honey, and the most efficacious, the solution of sugar of lead. The latter, however, will not answer in genteel practice, as it stains the teeth for some time of a dark colour.

Distrusting all such remedies, Mr. Pearson has adopted a mode of practice which is somewhat peculiar. It is recommended, that the patient lay aside the ordinary coverings of the face, and expose himself freely to a cool, though *a perfectly dry* air, and in the country if possible. Of the utility and safety of this practice, I entertain no doubt, having adopted it with advantage.

Mercury, owing to some unintelligible cause, operates occasionally *as a poison*, inducing effects totally different from its ordinary agency *as a remedy*, and which seem not at all influenced by the quantity taken, or the severity of the ptyalism. Though the mode in which it displays this deleterious operation, is not uniform, it generally appears in the shape of what has been denominated, by Mr. Pearson, *erethismus*. As in most instances of poisoning, there is here a sudden, and sometimes unexpected prostration of strength, attended by anxiety about the præcordia, irregular action of the heart, small quick pulse, occasional vomiting, nervous tremors, pale, contracted countenance, sense of coldness, &c. In this state, a very slight exertion, such as attempting to walk, or rise from bed, will some-

times instantly prove fatal. The treatment of the case is to intermit the mercury, to give cordials, such as carbonate of ammonia, &c.—with freedom of ventilation, and, when practicable, an entire change of air. After a time, we may again recur to it, and with the ordinary advantage.

SECTION XII.

Of the Pharmaceutical History of Mercury.

MERCURY is a metal found imbedded in the earth, in many parts of the world—and, when procured in perfect purity, is called virgin mercury: but it is most commonly discovered in a state of mixture, or combination with extraneous substances, from which it is separated by chemical processes. It is now universally admitted, that mercury, in its native or metallic state, has no medicinal powers independently of its ponderosity, and hence it is no longer employed. To fit it for our purposes, it is variously modified by chemical and pharmaceutical treatment—and, thus changed, it becomes one of the most active and at the same time extensively useful articles in the whole compass of the materia medica. The processes by which these conversions are accomplished, may, perhaps, be reduced, to oxidation in different degrees, and a union with acids, constituting the mercurial salts.

By long continued trituration with saccharine, mucilaginous, oily, or cretacious substances, the particles of mercury are minutely divided, and become oxidised, by having their surfaces repeatedly brought into contact with the atmosphere. These preparations are among the most mild and efficacious, and are not so apt as others to induce any harsh or morbid effects. They are numerous. But as the whole agree in the leading and material properties, I shall only notice such as are in use in the present reformed state of practice.

PILULÆ HYDRARGYRI.

The blue pill is made by triturating quicksilver with the conserve of roses, or any mucilaginous matter, till the globules are entirely extinguished.* The formulæ of the several pharmacopœias are not precisely the same, which is to be regretted, as it leads to uncertainty in our prescriptions.† Generally, I direct that the pills be so prepared that each may contain about a grain of the metal, one of which may be

* The conserve of roses has been objected to by Swediaur, who supposes that its astringent principle impairs the strength of the mercury. It is said, on better authority, that, in order to heighten its colour, a small portion of sulphuric acid is often added to the conserve, in which case, a *sub-sulphate* of mercury is formed.

† One grain of mercury is contained in four grains of the mass, made according to the London and Dublin Pharmacopœias, and in three, according to that of the Edinburgh.

given morning and night, or oftener, in certain cases. This is undoubtedly one of the most lenient of the mercurial combinations, and is by no means destitute of activity.

Being not disposed to purge, when exhibited in small portions, it is to debilitated or irritable bowels peculiarly appropriate. But should it do so, a few grains of rhubarb, taken every morning, will be found, by imparting tone to the bowels, to resist that tendency. There is, in a word, scarcely an indication to be fulfilled by mercury, the purgative effect excepted, to which this preparation is not adequate. Even with this view, it sometimes answers very well, in the dose of ten or fifteen grains. It is much prescribed in cases where *salivation* is demanded, though it is still more used an *alterative*.

HYDRARGYRUM CUM CRETA.

Triturated with chalk, mercury becomes slightly oxidised, forming a mild medicine. Its utility, however, is differently estimated. By Fordyce it is condemned as inert, while, by a later writer of great authority, it is praised as "an excellent mercurial, which has been known to cure syphilitic affections, when the constitution had proved rebellious to every other preparation."* I have no experience with it. The dose is from ten to thirty grains.

* Vid. Paris's Pharmacologia.

UNGUENTUM HYDRARGYRI.

Of these there are two kinds, the weaker and the stronger. The first is made by rubbing together one part of mercury and suet each, and three parts of lard, till the globules entirely disappear. The second is prepared precisely as the first, except that it contains an equal proportion of the ingredients. But I have sometimes directed it of double this strength.

As the manufacture of mercurial ointment, agreeably to the preceding formulæ, is a tedious and op-erose undertaking, various substances have been added, in order to facilitate the process. But most of these are inadmissible, as affecting, in some way, the excellence of the product. The spirit of turpentine, which is most generally resorted to for this purpose, renders the ointment irritating to the skin—and sulphur, which is also used, is supposed, by forming a sulphuret, to diminish the powers of the mercury. With the same view, rancid oil, or a portion of the old ointment, has been proposed, and perhaps may be adopted without detriment. But nothing answers so effectually as a pittance of rhubarb, which speedily extinguishes the mercurial globules, and, I believe, does not impair the energies of the ointment.

In union with unctuous matter, mercury exists partly in a state of extreme mechanical division, partly oxidated, and partly, as some have recently conjec-

tured, united with sebatic acid. Though the oxidation of the metal was long doubted, and, indeed, entirely denied by many, it is now ascertained that this process takes place : and it seems highly probable that the efficacy of the ointment is mainly owing to this circumstance. Yet it is also alleged, and with some plausibility, that the sebatic acid formed in animal fat, when exposed to the air, may combine with a portion of the mercury, and that the improvement of the ointment by keeping, a fact long known, is perhaps owing to the gradual formation of a sebate of mercury.*

Among the advantages of these unguents, they afford two modes by which mercury may be introduced into the system. As an enema, the ointment is sometimes, in great emergencies, employed, one or two drachms of the strongest kind being intimately blended with a small portion of mucilage, and by repetition in this way the ordinary effects of the mineral can be commanded.

The ointment, however, is much more commonly applied by friction to the inner side of the thighs. Two

* Experiments made recently by Mr. Donovan, show, that, in the officinal ointment, mercury exists in the state of metal, *mechanically mixed*, and in that of an oxide, *chemically combined* with the lard, and that to the latter all the activity of the preparation is to be ascribed. He accordingly formed a direct chemical combination, by continually agitating together lard and black oxide of mercury, at the temperature of 350° of Fabr. for two hours. On trial, it was found much more prompt and efficient than the officinal ointment, and hence is strongly recommended to general adoption.

or three drachms of it are rubbed in every night and morning, in ordinary cases. But where the immediate and full impression of the remedy is called for, the frictions must be extended more or less over the whole surface of the body. The effect may still further be promoted by the wearing of socks filled with the ointment, or flannel drawers coated with the same, or by wrapping the patient in blankets prepared in a similar manner.

Of course, the case must be of the most urgent nature to justify such treatment—as mercury, so profusely applied, might bring on a condition, which, if it did not suddenly terminate life, would, at least, render it most deplorably wretched. Yet, cases do occur, as the last stages of obstinate fever, hydrocephalus, tetanus, hydrophobia, and a variety of others of the same desperate character, which might be enumerated, where this intrepid practice would be fully warranted.

By inunction, the application of mercury frequently becomes indispensable—since, owing to inability to swallow, or to extreme irritability of the bowels, it is impossible to administer it otherwise. It does sometimes happen, too, when neither of these impediments exists, that it will produce no impression on the stomach. What condition of this viscus prevents its operation, is not distinctly understood. But of the fact there can be little doubt. I have often had occasion to remark it. Nor is it less certainly known, that under circumstances of this gastric insusceptibi-

lity to the article, it will frequently produce all its effects when used in the shape of friction. How it operates when thus applied is a matter of controversy.

Till recently, it was supposed that the mercurial particles were taken up by the lymphatics of the surface, and thus conducted into the system—a theory utterly denied by all those who disbelieve in cuticular absorption. The latter maintain, that by friction, an exhalation is made to arise, which enters by the lungs, or operates on the olfactory nerves, or, entangled with the saliva, is swallowed, and acts on the stomach. In support of each of these hypotheses the facts are strong, and go far to demonstrate that the effect may take place in either way. It is confessed, that if frictions be used with a glove, or some other protection to the hand, salivation rarely happens to the person employed in the application of the ointment, while the patient will experience it in the fullest extent. To reconcile this with any other supposition than cutaneous absorption, or to an action of some kind on the surface, is surely very difficult.

But on the other side, it is as well authenticated, that effluvia from mercurial frictions will often produce complete salivation. I have known, in the course of my own practice, two instances, and have heard of several more, in which salivation was excited in patients placed in the same ward with those employing mercurial inunctions. It is, moreover, not an uncommon event, for persons engaged in the

manufacture of the ointment, to become fully salivated by the exhalation in that process.

Even from very moderate trituration of quicksilver, effluvia arise, which will occasion the amplest effect. To this purport, there is a fact of the most decided and unequivocal description related in the Edinburgh Medical and Surgical Journal. During a former siege of Cadiz, a British ship of the line, having on board many casks of quicksilver, had several hundred of her crew profusely salivated in consequence of the casks bursting and discharging the contents into the hold of the vessel. In this case, it appears that the slight trituration of the quicksilver against the lining of the ship, from the agitation of the waves, disengaged effluvia which produced such extensive mischief.

To revert to the original hypothesis—there seems nothing in the case before us to militate against the new doctrine, which denies the power of absorption to the skin, as a natural and regular function. Every one must admit, that, under certain circumstances, such an effect will take place. In one of my early discussions, I showed that it might be done either by forcing the substance under the scales of the epidermis, as in the instance of frictions—or by long continued bathing, or topical fomentations, the cuticle becoming so changed in its organization, as to admit of transudation, or the insinuation of the fluid under its squamous structure, so as to come in contact with the mouths of the lymphatics.

But here a question arises, how does mercury operate when thus applied? Does it act by entering the circulation, or by local impression propagated through the medium of sympathy? On a former occasion, I so fully examined this point, that I am not disposed at present to dwell upon it. It is still my most deliberate conviction, that whenever a substance is applied to a susceptible portion of the body, either internally or externally, an action is excited, which is extended to a greater or less degree, according to the circumstances formerly indicated. There is, indeed, no other hypothesis which has the slightest foundation in fact, or that is at all consistent with the existing state of our knowledge. The ancient notion especially on this subject, which would refer the operation of medicines to their entrance into the circulation, is perfectly gratuitous, originating at a period of darkness, and when medicine was comparatively in its infancy, and is now abandoned by every one whose intelligence has at all kept pace with the progress of our science.*

Continuing the subject, I am now to notice the rest of the mercurial preparations deemed worthy of attention. These are numerous, and some of them highly important, though I have already disposed of most of them under other heads.†

* As an external application, mercurial ointment has been found very useful in erysipelatous inflammation. Vid. the Communication on the subject, in the Phil. Med. Journal, by Drs. Dean and Little.

† Vid. Emetics, Cathartics, Anthelmintics, Escharotics.

HYDRARGYRI SULPHURETUM RUBRUM.

This is the cinnabar of the shops, made by mixing crude mercury with melted sulphur, and afterwards subjecting it to sublimation. It is probably a mere sulphuret, or bi-sulphuret, though some chemists think otherwise. Besides this, which is denominated *factitious*, there is a *natural* cinnabar, differing from it only as regards the degree of purity.

Neither of the two preparations is prescribed at present, as internal remedies, though they are sometimes used in the form of fumigations. This is among the most ancient modes of affecting the system by mercury—which, however, lost its reputation, and was rejected. The practice has since been revived, and is occasionally resorted to in Europe. By Mr. Abernethy, whom I saw employ it with distinguished success, it is highly commended. He contends, that fumigations will affect the system, when all other means have failed, and in general very speedily. Like inunctions, too, they are applicable to many cases, where, from irritability of the bowels, or other causes, mercury cannot be administered internally.

A bath has been invented for the more convenient and complete application of these fumes. It consists of little more than encasing the patient's body, so that the vapours, as they ascend, may surround it, and be prevented from flying off. Thus treated, the emi-

gent surgeon whom I have named declares, that he never knew a case of syphilis which was not radically cured. Yet, it must not be concealed, that Mr. Pearson, whose authority, in every view, is not less respectable, entertains an opinion somewhat different as to the efficacy of the remedy. He asserts, that, though it will arrest the disease very promptly, and hence is useful in violent and malignant cases, its effects are not permanent. It only suspends the attack for a time, which inevitably returns in an aggravated shape. This is a matter of such consequence in a practical light, that I shall cite his own words. "The conclusions," says he, "which I deduce from my experiments, are the following:—

"That, where checking the progress of the disease suddenly is an object of great moment, where the body is covered with venereal ulcers, or where the eruptions are large and numerous, so that there scarcely remains a surface large enough to absorb the ointment, the application of the vapour of mercury will be always attended with evident advantage. But, in addition to these remarks, I think it right to subjoin, that it is extremely difficult to introduce a sufficient quantity of mercury into the animal frame, in this way, so as to secure the patient against the hazard of a relapse. I therefore consider it as a mode of treatment by no means eligible in general practice.

"The vapour of mercury, when applied to venereal ulcers, to fungi, and excrescences, is a medicinal of singular efficacy, and merits the confidence

of the surgeon. But little or no account should be made of the mercury which is thus received into the circulation; for we ought never, in these cases, to introduce a smaller quantity of the specific by inunction, for the purpose of securing the constitution, than if no fumigation had been employed."

It is not easy to reconcile such opposite statements. May it not, however, in some measure, be done, by supposing that the deplorable cases of lues, which came under the care of Mr. Pearson, in Lock Hospital, the chief source whence his experience is derived, required, for their entire cure, a stronger mercurial impression, than can be made, through this medium? As yet, I have never had occasion to adopt this practice, nor do I know that it has been done in this city. I am confident, however, not less from what I saw myself, than from the character of Mr. Abernethy, that this plan of treatment is fully adequate to the extermination of most of the cases of the venereal disease.

Whatever difference of opinion may be entertained on this point, there can be none, I think, as to the efficacy of mercurial fumigations in certain ulcers, whether proceeding from venereal taint or otherwise. The fauces, especially, are prone to take on a state of ulceration, which will continue, in some instances, for a succession of years, pertinaciously resisting the ordinary remedies. Two or three such cases I have met with, which readily submitted to this measure. The same species of ulceration is still more frequent-

ly to be found on the prepuce, or glans penis, or the labia pudendi, or around the anus, which is managed with not less success.

HYDRARGYRI OXYMURIAS,

VULGO

HYDRARGYRUS MURIATUS CORROSIVUS.

Corrosive sublimate is composed of the metal highly oxidated, and combined with a large proportion of muriatic acid.*

Being exceedingly active, it is employed with various views. Externally, as we have already seen,† a solution of it is much used as a stimulating wash or escharotic in chancre, in sores generally of an indolent tendency, and in various cutaneous diseases. It also forms one of the best gargles in venereal sore throat—and, when reduced by free dilution, is resorted to as an injection in gleet, and as a collyrium in certain cases of ophthalmia.‡ But it is as an internal remedy, and particularly in the secondary stages of syphilis, that it displays its most active powers, and has acquired the highest reputation. No small dif-

* According to the latest views, it is a bi-chloride of mercury.

† Vid. Escharotics.

‡ Dissolved in lime water, in the proportion of two grains to an ounce, we have the *aqua phagedenica*, so much used as a wash to ill-conditioned ulcers.

ference of opinion, however, is entertained as to the degree of its efficacy in these cases. Of those who think slightly of the antivenereal powers of this medicine, Mr. Pearson is by far the most conspicuous, and his ample experience gives him every claim to be heard upon the subject.

After tracing with some minuteness the progress of medical sentiment, with regard to the properties of this preparation, he goes on to observe :

“ When the sublimate is given to cure the primary symptoms of syphilis, it will sometimes succeed, and more especially when it produces a considerable degree of soreness of the gums, and the common specific effects of mercury. But it will often fail of removing even a recent chancre, and, where that symptom has vanished under its use, I have known a three months course of the medicine fail of securing the patient from a constitutional affection. The result of my observations is, that simple mercury, calomel, or calcined mercury, are preparations more to be confided in for the cure of primary symptoms than corrosive sublimate. The latter will often check the progress of secondary symptoms very conveniently, and I think it is peculiarly efficacious in relieving venereal pains, in healing ulcers of the throat, and in promoting the desquamation of eruptions. Yet, even in these cases, it never confers permanent benefit, as new symptoms will appear during the use of it : and, on many occasions, it will fail of affording the least advantage to the patient from first to last.

“ I do, indeed, sometimes employ this preparation in venereal cases. But it is either at the beginning of a mercurial course, to bring the constitution under the influence of mercury at an early period, or during a course of inunction, with the intention of increasing the action of simple mercury. I sometimes prescribe it also, after the conclusion of a course of frictions, to support the mercurial influence in the habit, in order to guard against the danger of relapse. But, on no occasion whatever, do I think it safe to confide in this preparation singly and uncombined, for the cure of any true venereal symptom.”*

Opposed to this great practitioner, there are many of the most distinguished names belonging to our profession. Commencing with Bazil Valentine, who seems to have been the first to prescribe it, we have a pretty regular chain of authority in support of its efficacy down to the present times. Yet, some conspicuous exceptions might be cited to the contrary. Bloomfield, formerly surgeon in chief to the Lock Hospital, disapproved of it, and the late Dr. Kuhn informed me, that Cullen, in his clinical lectures, also maintained that it is not effectual. The practitioners of the Continent have always reposed much confidence in this preparation. It is highly extolled by Boërhaave, Van Swieten, De Haen, and numerous writers of more modern date, of every country. There are not wanting, indeed, some very eminent authori-

* Pearson, on various Articles of the Materia Medica in Lues Venerea.

ties, who insist that in every state of syphilis, recent or advanced, it is by far the most certain, and in every view the preferable preparation of mercury. Not, however, superfluously to multiply citations on this point, I shall be content with referring to the remarkable record given by Locher, chief physician to the Venereal Hospital at Vienna. It is stated by him, that, from the year 1754 to 1762, he cured not less than four thousand and eighty persons of lues venerea in its different forms, by the corrosive sublimate alone, and without inducing salivation, or any unpleasant constitutional effects. The same strong evidence is borne to its superior powers by Professor Hosack.

To arrive at a satisfactory conclusion, where the reports are so contradictory, cannot be easily done. Directed by my own experience, I should think it best to treat syphilis in its primary form by calomel, or the blue pill, and by inunctions—using corrosive sublimate only in the secondary stages of the disease. This course, I believe, is pursued by most of the best practitioners of this country and of Europe. Yet, as an alterative, in any case whatever, though more particularly in the secondary stages of syphilis, chronic rheumatism, and cutaneous eruptions, this preparation is exceedingly advantageous, and often in the minutest doses, alone, or combined with other articles. To this mode of using it, the French practitioners are much addicted, giving, sometimes, the tenth or fifteenth of a grain only as a dose.

In dismissing this article, I have only further to mention, that it has been applied in a new way to the cure of gonorrhœa, by Mr. Addington, a surgeon of reputation in London. Three grains of corrosive sublimate, in an ounce of the spirit of wine, are dissolved, of which one half is to be taken on going to bed. The immediate effect is a very profuse salivation, which continues for an hour or little more. But, even in this short period, the patient will spit several pints. The succeeding day a dose of salts is prescribed, and at night, the residue of the mercurial mixture. The next morning salts again, and then the cure is completed. Of this very singular practice, I know nothing myself, and at present can hardly recommend it to imitation. But, as suggested by Darwin, might it not prove useful in hydrophobia, tetanus, &c. ?*†

* *Incompatible substances.*—Alkalies, and alkaline earths, tartrate of potash, and antimony—superacetate of lead—sulphur—sulphuret of potash—and soaps—iron—lead—copper—and bismuth, in their metallic state decompose it. The following vegetable infusions also produce precipitates, viz. The infusions and decoctions of chamomile flowers, horse radish root—columbo root, catechu—cinchona, rhubarb—senna—simarouba—oak bark—tea, and almond emulsion.

† As this salt has been supposed to arrest the progress of syphilis more rapidly, and, at the same time, to excite the salivary glands less than any other preparation of mercury, it generally forms the basis of those dangerous nostrums, which are advertised for the *cure of syphilis without mercury*. The contrivers hope to elude detection by the density and colour of the preparation.

GOWLAND'S LOTION is a solution of *sublimate* in an emulsion formed of bitter almonds, in the proportion of about gr. iss. to f ℥i. A solution

This is the most powerful of all the mercurial preparations. The dose cannot safely exceed a fourth of a grain, nor should more than one grain be given in the twenty-four hours. The usual dose to com-

of this mercurial salt in spirit of rosemary, is also sold as an empirical cosmetic.

NORTON'S DROPS. A disguised solution of corrosive sublimate.

WARD'S WHITE DROPS. This once esteemed anti-scorbutic was prepared by dissolving mercury in nitric acid, and adding a solution of carbonate of ammonia; or frequently it consisted of a solution of *sublimate* with carbonate of ammonia.

SPILSBURY'S ANTI-SCORBUTIC DROPS. Of *corrosive sublimate* ℥ii. Prepared sulphuret of antimony ℥i. Gentian root and orange peel, equal parts ℥ii., shavings of red saunders ℥i., made with a pint of proof spirit into a tincture, which is to be digested and strained.

“THE ANTI-VENEREAL DROPS,” so famous at Amsterdam, were analysed by Scheele, who found that they were composed of muriate of iron, with a small proportion of *corrosive sublimate*.

MARSDEN'S ANTI-SCORBUTIC DROPS. A solution of *sublimate* in an infusion of gentian.

GREEN'S DROPS. The basis of these also is *sublimate*.

SOLOMON'S ANTI-IMPETIGINES. A solution of *sublimate*.

ROB ANTI-SYPHILITIQUE, par M. L'affecteur, Medicin Chemiste. This popular nostrum of the French, contains as a principal ingredient, *corrosive sublimate*. A strong decoction of the *arundo phragmatis*, (the *bull-rush*) is made, with the addition of *sarsaparilla* and *anniseeds* towards the end, which is evaporated and made into a rob, or syrup, to which the *sublimate* is added.

SINOP DE CUISINIÈRE. This consists of decoctions of *sarsaparilla*, *burrage flowers*, *white roses*, *senna*, and *anniseed*, to which *sublimate* is added, and the whole is then made into a syrup with sugar and honey.

TERRE FEUILLETÉE MERCURIELLE of Pressavin. This is *tartarized mercury*, for it is made by boiling the oxide of mercury (obtained by precipitating it from a nitric solution, by potass) with *cream of tartar*.

VELNO'S VEGETABLE SYRUP. There is great obscurity with respect to the genuine composition of this nostrum; it is supposed to consist of *sublimate* rubbed up with honey and mucilage. I have reason, however,

mence with, is one-sixth or eighth of a grain exhibited in the form of pill, or solution in water or ardent spirits. The first is the more agreeable, though perhaps the latter mode is to be preferred, as the quantity may be precisely ascertained.

to believe that it contains *antimony*, and the syrup of marsh-mallows. Swediaur says, that volatile alkali enters into it as an ingredient; this alkali was proposed by Dr. Peyrile, as a substitute for mercury, and it constitutes the active ingredient of the following composition, which was proposed by Mr. Besnard, physician to the king of Bavaria.

TINCTURA ANTI-SYPHILITICA. *Sub-carb. potass.* ℥i. dissolved in *aq. cinnam.* oj. *opiū puri* ℥ii., dissolved in *spir. cinnamom.* f ℥iv., mix these separate solutions, and put them on a water bath for three weeks, taking care to shake the vessel frequently; to this add *gum arabic* ℥ii., *carb. ammoniæ* ℥i., dissolve in *aq. cinnamomi*; mix, filter, and keep for use. Dose, twenty-four drops three times a-day, in a glass of the cold decoction of marsh-mallow root.

The external use of these drops is also advised for local syphilitic complaints!

Paris's Pharmacologie

HYDRARGYRI SUB-MURIAS,

VULGO

HYDRARGYRUS MURIATIS MITIS.

To what I have already said of this article, under various heads, I can add little.* Calomel, as is well known, is considered the most valuable of the mercurial medicines, and is susceptible of the widest practical application. I shall just state, that when used as a salivant, it is given in the dose of one or two grains in pills, several times a day, and, if it purge, opium should be combined with it.

It will be perceived, from the preceding inquiry, that there are at least four modes by which the system may be put under the mercurial impression, of each of which I have treated, and also of the appropriate preparations for the purpose. But it sometimes happens, owing to peculiarity of condition, that there is

* For an account of its chemical composition, &c. vid. cathartics.

a total insusceptibility to the action of the medicine, and, in spite of all our efforts, salivation cannot be induced. It is in highly excited states of the system that we most commonly meet with this resistance, and especially where much fever prevails. The actions of the two are incompatible, and that of the disease must be subdued before the remedial one can take place, with which view, venesection particularly must be called into requisition. Now and then, however, we are equally frustrated in our attempts to salivate under different circumstances, or in cases, at least, in which there is no uncommon vascular vigour or general excitement. Copious purging, or vomiting, or sometimes even nausea, I have found almost invariably to succeed in awakening susceptibility to the remedy, so that the desired end is fully attained.

Of the *modus operandi* of mercury in the cure of disease, a question once of great interest and warmly discussed, I have nothing new to say, and shall therefore dismiss the subject with one or two remarks. The well-known explanation of Mr. Hunter, that its efficacy in syphilis depends on its general and permanent stimulant power, by which it induces and keeps up an action that ultimately supersedes the morbid one, may be extended, it seems to me, to all other cases. Confessedly there is no article of the *materia medica* so diffusive in its effects, which, pervading the whole system, enters into every recess, and, acting on every part, leaves no morbid impression untouch-

ed. It is by virtue of this general and revolutionary action that it is calculated to meet such a vast variety of indications, to an extent, indeed, that it is now prescribed, as I formerly mentioned, in all cases, with some few exceptions, where other modes of treatment have failed.

Of the notions relating to the mode of operation of mercury, that which alleges its entrance into the circulation is surely the most gratuitous and absurd. Elsewhere* having stated, somewhat in detail, the leading objections to this theory of the action of remedies, I shall not renew the discussion. Yet I cannot forbear to remark, that it seems to me nearly certain, that the primary effect of the article is uniformly on the stomach, and that, however administered, that organ, either by direct impression or indirect sympathy, is put in a condition, of which the salivary glands and all other parts participate.

Experiments, formerly referred to, and which have recently been confirmed in Europe, show that mercury does not pass into the circulation, and we are fully aware, that an impression on the stomach, from a variety of causes, as the sight of savoury or offensive food, or whatever excites nausea, directly or indirectly, as minute doses of emetic substances, or the irritation of the gravid uterus, increases the salivary discharge, &c. To this it may be added, that, without the stomach is susceptible to its action, no effect whatever is

* On the Modus Operandi of Medicines.

induced, and, to render it so, as well as to correct the inordinate effects of the article, we resort to remedies, the immediate operation of which is on the primæ viæ.

To all that I have said, however, it is replied, that mercury has actually been found in the cells of the bones, and Boerhaave is cited for the fact. It is stated by the same high authority, "*that he once saw with his own eyes, and hence could not be deceived, in the semen of a ram, the germs of the future animal, following each other exactly like a flock of sheep entering a pen.*"*

Without meaning to impeach the veracity of this truly pious and illustrious man, I cannot forbear to remark, that such statements strongly remind us of the uncertainty of human testimony, where the judgment permits itself to be perverted by the ardour of fancy, or an ambitious desire to establish preconceived notions.

* Dover, the author of the powder which bears his name, has also been brought forward to bear evidence to the absorption of mercury. It is many years since I read his work, and not being able now to procure it, I must rely on general recollection in my reference to it.

Considering disease mainly to depend on obstruction, he gave crude mercury very largely, which he supposed, by permeating every part, would act as a deobstruent, and, in illustration of its pervading effects, gives the instance of a malefactor, who, having previously taken it freely for lues venerea, had, by the convulsions of death, under the gallows, the whole of it, amounting to a pint or more, shook out of his blood-vessels, and accumulated in large sacs, on each side of the rectum!!!

SECTION XIII.

Of Tonics.

IN the widest acceptation of the term, this class of remedies is extremely extensive, since it includes every means which invigorates the powers of life. But, technically, it is employed in a much narrower sense.

By tonics we usually understand the medicinal substances exhibited to correct debility or relaxation of the system. How they operate in restoring tone to the body has never been very distinctly ascertained. But it is obvious, that it cannot be either by mechanical or chemical laws, as has sometimes been alleged.

Like that of all other articles of the *materia medica*, their action must be regulated by principles incident to vitality alone. They are stimulants, differing chiefly from those substances of which I have already treated under that head, by producing greater permanency of impression.

More than once, in the progress of the discussions relative to the *modus operandi* of medicines, I have stated, as an indisputable proposition, that a high degree of excitement, suddenly raised, is succeeded by proportionate languor and debility. This is especially evinced in the action of the diffusible stimulants. But, at the same time, I showed it was equally true, that, if this excitement be slowly created, there will be no correspondent depression, even though the sustaining powers be withdrawn. It hence appears, that it is by virtue of this law, that tonics mainly produce their effects—though we must still admit, that, like every other class of the *materia medica*, they are endowed with some properties peculiar and distinctive.

Tonics exert a very wide and pervading influence over the system. Commencing their operation on the stomach, they strengthen the digestive organs, augment the force of the circulation, promote the secretions, or restrain them when morbidly increased, impart tone to the muscular fibre, brace the nerves, and renovate generally the power and functions of the animal economy.

Concerning the principle which gives the tonic power, some difference of opinion has been entertained, which scarcely now deserves to be noticed. Cullen supposed it to be the same quality as that which occasions bitterness. But, though it holds to a considerable extent, there would seem to be no necessary connection in the case. Exceptions at least are numerous, as we see very strikingly in opium and

digitalis, which are bitter, though not tonic, and, conversely, in galls, and in many of the metallic articles, which, though tonic, are not bitter in the slightest degree.

In the use of tonics, it may be proper to attend to the following rules :

1. Let the article be carefully selected in reference to the particular object in view. Where it is designed to overcome the feeble remains of morbid action, the aromatic or stimulant tonics will be found best, and conversely, such as are slow and durable in cases of mere debility.

2. In determining on the dose we are to be governed by the same principle. The first case requires it to be large, so that a decisive impression be made, and the second, small and frequently repeated.

3. Guided by a similar distinction, the article is to be varied in the one instance, if the anticipated effect be not speedily produced, and in the other adhered to for a much longer time. In paroxysmal diseases more particularly, tonics must be continued with some regularity during the whole twenty-four hours, so that the impression once made shall be sustained without any great diminution.

4. In prescribing tonics, we should be very attentive to the state of the system, seeing that vascular action is properly reduced, the primæ viæ cleansed, and the hepatic apparatus sound. Negligence, in this respect, is the main cause of the failure, and even

mischief, so often experienced from this class of medicines.

5. In conclusion, I shall only remark, that, as agreeing in their leading properties, most of the rules suggested as proper in the use of stimulants are scarcely less applicable to tonics—and to these I beg leave to refer.

SECTION XIV.*Of particular Tonics.*

BESIDES the articles of the materia medica properly denominated tonics, we have a variety of other means conducing to the same end, which are too important to be wholly overlooked. Of these, I shall, in the first place, very briefly treat, rather suggesting some precepts for the regulation of their employment, than indicating, in detail, the cases of disease to which they are applicable.

Among the means to which I allude to overcome debility, or to invigorate the system, is a properly regulated diet. Neglected as this commonly is, it is still undeniably of the highest importance in the practice of our profession.

1. Let the diet of the patient be always accommodated to the state of the system. After recoveries from acute diseases, it should, at first, consist of the lightest vegetable matter, and especially the farinaceous articles, such as rice, tapioca, arrow-root, and

sago. To these may succeed eggs, oysters, game, the white poultry, and, finally, where we wish the fullest tonic effect, beef and mutton. In making the selection, however, we should be influenced not a little by the palate of the person, since the pleasure received in eating is of itself no ordinary stimulus, and particularly to a very debilitated system. Nor is the influence of national habits to be overlooked. What may be very offensive to a native of one part of the world, might prove highly grateful and even salutary to that of another.

2. Enjoin on the patient, whatever may be the nature of the case, provided he is very weak, to eat much more frequently than the common meals. The stomach has been pronounced, by a very sagacious observer,* to be, in one respect, like the school boy, —as always doing mischief when not employed. This short aphorism contains a vast deal of medical wisdom. By eating often, while we prevent evil, we sustain the system by a constant impression through the stomach. To this very general rule, there may be occasionally an exception. In irritable states of the stomach, when fatigued and disgusted to satiety, or too much enfeebled to perform its functions, an entire intermission of food, for some length of time, may enable it to recruit its energies, as is illustrated in the effect of rest on some other organs.

* Sir William Temple.

3. Commonly solid food is to be preferred to fluids,—as more comfortable to the stomach, and restoring strength with greater rapidity. This applies particularly to persons of plethoric tendencies, or who are subject to active inflammations, provided the quantity be small. In dyspeptic states, solid food only is admissible. But it should be eaten slowly and chewed well.

4. No point is more cardinal and important in diet than simplicity. This holds equally true both as regards acute and chronic diseases, and there are some cases, such as the affections of the stomach, in which a restriction to a single article of food is indispensable to the cure.

5. Certain drinks may be also used for similar purposes. The malt liquors, as well as port wine, are of this description. They should be taken moderately, as well to avoid indirect debility, as weakening the powers of digestion by deluging the stomach.

Next to diet, in point of efficacy as a tonic, are the hot and cold baths. Though so different in temperature, they produce effects not very dissimilar. Each, when judiciously managed, will speedily, in many instances, invigorate the body. The hot bath operates directly on the system as a stimulant, or tonic, increasing all its actions—whereas the cold bath produces, at first, languor and depression, after which, however, a strong reaction takes place, with a powerful invigoration. This is a sure test of its efficacy.

1. The cold bath is to be used in the morning or at twelve o'clock. The latter hour answers best for

invalids. To be efficacious, it should be repeated daily, though without remaining in it beyond a few minutes. Continuing longer under the influence of cold, it is apt to depress the system below the point of reaction, and otherwise to do much harm.

2. It should not be employed when the body is in a state of perspiration, however slight, if debilitated by fatigue. Experiments have proved that no danger arises from the application of cold to the body, when perspiring, provided the system be not previously exhausted. But if it be, no reaction takes place, and very serious consequences ensue.

To the warm bath most of the preceding rules are equally pertinent.

Like the cold, it should be used at mid-day, and repeated frequently, to produce any very great effect. The patient is to continue in it considerably longer, and it is always to be taken in a warm room, at least in winter. On coming out of it, he is to be rubbed thoroughly dry, and if a high degree of excitement be desired, frictions ought to be actively applied. To contribute to the same end, certain stimulating articles may be added to the water, as salt, cayenne pepper, mustard, nitric acid, &c.

As a tonic, exercise is undoubtedly among the most decisively useful. It has been divided into two kinds, *active* and *passive*. In extreme debility, or in the first stage of convalescence from an acute disease, it is proper to begin with the second spe-

cies. This consists chiefly of frictions, which may be made by the naked hand, or with a brush, either alone, or with the addition of some stimulating matter. Frictions are a more important remedy than is commonly imagined in the management of disease, as well as in the preservation of health. Every practitioner is aware of their great utility in some of the sinking states of acute diseases, and especially when made with irritant substances. Nor are they less so, in many of the chronic affections, and particularly in such as are directly or indirectly connected with the alimentary canal, in which I include some of the neuroses. It was the practice of Boerhaave, as appears by his "Medical Correspondence," a work at present too little consulted, to insist much on the efficacy of the remedy in all cases of this nature—and experience has taught me that his advice was judicious.

The use of frictions, both as a luxury, and as conducive to health, is interwoven with the habits of most of the oriental nations—and, with the same view, it has been lately adopted in Europe, particularly by the individuals of fashionable life, who are desirous of retaining beauty of complexion, or ambitious of a general rejuvenescence.

The ordinary course pursued in this respect is to rub, at least once a-day, for half an hour or more, the whole body with fine dry salt, which creates a universal glow, renders the skin smooth and florid, im-

parts vigour to the muscles, improves appetite and the powers of digestion, and in all its tendencies is highly salutary.

Next to this simple mode of promoting the actions of the body are the cradle, and the chamber horse. The latter affords very pleasant exercise, and is much resorted to. Besides these, other contrivances have been devised for this purpose, or as an amusement for persons confined to the house, among which may be enumerated the shuttle cock, dumb bells, &c.

Of the external modes of taking exercise, swinging, sailing, walking, and riding, constitute the most important. The benefit of all these is more or less heightened by the influence of the open air. Each is more particularly suited to certain cases, and exacts some degree of discrimination in making the proper application, though, of the whole, equitation is generally preferred. It is appropriate to a very large number of cases of actual disease, and, more than any other means of exercising, removes debility, whether chronic or recently induced.

In prescribing exercise, the following instructions are to be attended to.

1. Commence with what I have called the passive exercises, in the debility following acute diseases. The excitability here is often so great, that a more powerful impression is apt to re-excite febrile irritation, and induce a relapse.

2. Be careful to avoid fatigue, and, with this view, always direct the patient to discontinue the process,

while he still feels an inclination to a further indulgence.

3. Never permit exercise to be taken either on a full or empty stomach. For this reason, it is not safe for the patient, especially if he be much debilitated, to go out before breakfast, or immediately after a meal.

4. Let the mode of exercise be adapted as much as possible to the particular seats of debility or disease.

SECTION XV.

Of Medicinal Tonics.

OF this class, nature has been lavish in her supplies. Two of her kingdoms, at least, are exuberant in articles possessed of such powers. I shall first treat of the vegetable, and next of the mineral, tonics, which, on the whole, is, perhaps, the most convenient arrangement of these medicines.

CINCHONA OFFICINALIS.

In every point of view the Peruvian bark claims a priority of attention. The tree which furnishes it is a native of Peru, and, of course, could not have been known to Europe till after the discovery of the new world. More than a century, however, subsequently elapsed before the medicinal virtues of the bark were detected, or at least fully ascertained. It was first received in Europe in 1640, and soon after sold by

the Jesuits as an important remedy. From this circumstance, it acquired the title of *Jesuits' bark*. It, however, lost its reputation for a time, and was revived by Sir Robert Talbot, who employed it with such success, that Louis XIV. of France was induced to purchase the secret of the composition of his powder, called the *English powder*, at an exorbitant price.

The knowledge of the properties of bark was originally acquired by accident. We are told, that an Indian, ill of a fever, drank freely of a pool of water, strongly impregnated with the medicine, from some trees having fallen into it, and was thereby relieved. Nor is the mode, in which the article was introduced into the materia medica, scarcely less curious. It is related, that the lady of the viceroy of Peru, whose name was *Cinchon*, having been cured of an obstinate intermittent fever by it, under the direction of one of the natives of the country, its fame was diffused, and the remedy came into general use. To commemorate this incident, Linnæus, in a spirit of gallantry, conferred the title of *Cinchona* on the medicine.

In treating of the application of bark to the cure of diseases, I shall not, on account of its vast importance, too hastily dismiss the subject. As already mentioned, it was originally employed in intermittent fever, a case in which it has maintained an unrivalled reputation, amidst all the revolutions of opinion and vicissitudes of practice that have subsequently taken place.

Little diversity of sentiment now exists, with regard to the rules to be attended to in its administration, though, formerly, nothing was more unsettled. Among the early notions on this point, was the absurd one, that in an intermittent, some time should be allowed to elapse before the bark is exhibited, in order that morbid matter may be thrown off by the paroxysms. This was the advice of Boerhaave, who says, "*Cum morbus jam aliquo tempore duravit.*" The commentator on his aphorisms, Van Swieten, agrees with him, and we see the same concurrence on the part of Sydenham, and the whole of the distinguished practitioners of that and the preceding age.

Directly the reverse of this course is now admitted to be proper—and the fact is fully established, that the earlier we commence with bark, the more speedy and complete will be the cure. The only circumstance, indeed, which warrants the slightest delay, is the state of the alimentary canal, and, sometimes, of the system generally. Doubts are expressed by some writers, whether there really be even a necessity for such delay, and I am acquainted with several practitioners who act on the supposition of its inutility. Yet this is by no means the common opinion, or the established practice. It seems at present to be pretty well agreed, that though occasionally the bark may at once be used without any evacuations, still, as a general principle, it is hazardous, in this way, to undertake the cure of the disease. Either by puking

or purging, we now cleanse the primæ viæ, as a preliminary measure.

Emetics, however, in very modern times, and especially in this section of the country, have in a great degree given way to mercurial purges. These will, generally, answer exceedingly well, though cases of an intractable nature do often present themselves, in which the former can hardly be dispensed with. They operate here as evacuants, and still more by producing impressions on the stomach, which dis sever and break down those tribes of wrong or perverted associations, on which intermittents, and all other diseases of periodical recurrence, seem to depend. Of their efficacy, under such circumstances, my own experience supplies me with very abundant and conclusive evidence. This is so much the case, that, as intimated on a former occasion, I have found the most successful practice in unrelenting intermittents, kept up by the *force of habit* and not *visceral disease*, to consist, in the repetition of active vomiting for a succession of mornings, and though no bile or vitiated matter be ejected. To render the cure certain, in some instances, the patient should be kept, during the rest of the twenty-four hours, in a degree under the influence of opium, and fully just before the period of the anticipated paroxysm.

Besides the evacuation of the primæ viæ, venesection is occasionally demanded. Intermittent fever commonly is more or less inflammatory in the commencement, which diathesis is kept up with con-

siderable pertinacity. Without the loss of blood in such cases, the bark will probably be rejected, and consequently of no use—or, if retained, can only have the effect of aggravating the disease. It is under these circumstances, that intermittents, by the premature use of tonics, are apt to degenerate into remittents, or continued typhoid fever. To prevent this result, and to secure a complete apyrexia, a directly opposite course is demanded. My rule, therefore, is never to resort to bark till I have prepared the system by the several evacuations, so that it may receive this invaluable medicine beneficially. Exhibited with these advantages, I am persuaded that, if it be genuine, it will display such certainty of effect, as almost to be entitled again to be considered, as it formerly was, a specific in intermittents.

This species of fever is not unfrequently associated with visceral obstruction. The bark has been held here to be inadmissible. “That there may be cases of this kind,” says Cullen, “to forbid the exhibition of bark, I have not sufficient experience to determine. But, I am well persuaded, that it would be very dangerous to admit of any general rule on this subject. I am convinced,” continues he, “that it is in the cold stages of fever, that accumulations of blood are formed in the liver and spleen: that such accumulations are increased by every repetition of the cold stage, and consequently by the repetition of paroxysms, and I am, therefore, clearly of opinion that even considerable obstructions of the viscera, if without inflamma-

tion, ought not to prevent the exhibition of the bark in such quantity as may prevent the returns of the paroxysms. The question has several times occurred to me, in the case of persons, who, having frequently laboured under intermittents, had tumours and indurations remaining in the hypochondria, and had, when in that condition, a return of the intermittent fever. In such cases, I have freely employed the bark, and never found it to increase the affection of the liver or spleen: and in other such cases, I have constantly found that the avoiding the bark, and admitting, therefore, the repetition of the paroxysms, brought on disorders which often proved fatal."

The practice on this point may, in my opinion, be very easily adjusted. In cases of visceral obstruction, in which no inflammatory action existed, I have never hesitated, even for a moment, to employ the bark, so as to put an end to the fever. But where there was pain in the obstructed viscus, accompanied by some activity of pulse, I have uniformly found it, so far from doing good, to be unequivocally mischievous. The proper treatment here, is to resort to moderate, though repeated venesection, blisters, and sometimes to a slight salivation, or the alterative use of mercury, in milder cases, which will commonly cure both complaints.

At one time it was debated, whether the bark should be given immediately preceding the paroxysm. Cullen is decidedly in favour of the practice, though, from what I have observed, I cannot hesitate to pronounce

him wrong.* Exhibited at the moment, I have found, that, instead of preventing, it aggravated the attack, greatly increasing the fever and distressing the stomach. Yet some writers have gone so far as to contend, that no remission should be allowed in its use, and recommend its continuance throughout the paroxysm. Home gave it at the commencement, and Balfour and Clarke in the hot stage. I have not been induced to make this experiment, having perceived, that a dose of bark, while the slightest degree of fever exists, never fails to do mischief.

Cinchona is hardly less employed in remittent fever, and sometimes with great success. This might have been anticipated, as the two appear to be essentially the same disease, arising from similarity of cause, prevailing at the same season, and mutually exchanging character in many instances, in their progress. But, formerly, the bark was forbidden in these cases, under the supposition that the remission is never sufficiently complete to warrant its use. To the celebrated Morton the credit is ascribed of overcoming this prejudice, and for having fully established the utility of the medicine. Yet, whatever may be the propriety of the practice in some of the countries of Europe, it is among us to be received with much caution and discrimination. In the United States, or at least in those parts with which I am conversant, remittent fever is generally a bilious disease, more or less in-

* Heberden recommends an immense dose of the medicine to be given at this time.

flammatory, which in its commencement requires venesection, and throughout all its subsequent stages is best managed by evacuations of the alimentary canal and mild diaphoretics. Cases, however, do undoubtedly occur, more especially in those districts of country greatly exposed to marsh exhalations, and where the intermittent is the dominant type, which demand the use of the bark. It generally happens here, that the inflammatory diathesis is less, the remission longer and more distinct, and the case, in all its features, partakes in a greater degree of the mild intermittent character. Even under such circumstances, I have remarked, that bark could only be sparingly used, and when conjoined with the serpentaria it answered better. But, should the case present a typhoid tendency, such restrictions cease, and we are then to give the medicine alone, or with articles more cordial and stimulating, in every stage, regardless of any temporary febrile excitement.

In several forms of continued fever, bark is occasionally employed. Cullen informs us, that "when intermittent fevers have changed into remittents, and these have become continued, or when either this transition has been manifestly perceived, or that, from the place of the patient's habitation, from the season of the year, and from the nature of the prevailing epidemic, there is reason to conclude that a fever has arisen from the same marsh effluvia which produce intermittent or remittent fevers, we may consider it

as essentially of the intermittent nature, and treat it accordingly.”

This advice I think inapplicable to the fevers of our country. The case described is our bilious, inflammatory, autumnal fever, which I have shown, even in the instances characterised by remissions, is not always susceptible of the use of the bark. I believe that typhus is the only continued fever to which this medicine is adapted. This disease has hitherto been generally held to have its origin exclusively in animal effluvia or contagion. That this is often true, and always when it breaks out in crowded, ill-ventilated places, cannot well be denied. Yet it is equally demonstrable, that it sometimes, at least in the United States, proceeds from marsh exhalations, &c.

But is the disease thus generated precisely of the same nature as that which proceeds directly from contagion? Though this question has of late attracted much attention, and received an able discussion in Europe particularly, we are not prepared to determine the point positively.

While, on the one hand, it is alleged, that the contagion of typhus is the result of diseased vascular action, and hence can be no more imitated than that of small-pox by any other agency, it is, on the other, replied, that, plausible as this may seem, it is contradicted by experience, since a disease, with all the essential attributes, and general physiognomy, is actually induced under circumstances, where no contagion could be suspected. On this point I confess that my

mind is not made up. As typhous fever is admitted to be caused by a specific contagion, it seems to follow, that it ought to be specific in its nature, This is at least the case with all the rest of the specific contagions. Yet, as before remarked, we do see fevers originating from other sources, bearing the closest analogy to it. Whether these ever acquire the property of contagion, or become capable of reproducing themselves, is exceedingly doubtful in the estimation of the generality of practitioners. My own conviction is, that with the exception of the cases which arise from crowded apartments, it never happens, and, even here, the fact is not indisputably settled.*

The diagnosis between these forms of the disease cannot be established. It may, however, be affirmed as a general rule, that the species dependent on specific contagion, rarely, or perhaps never, prevails in warm weather. The cause is dissipated, either by the volatilization of the virus, or blown away by the freedom of ventilation, which is practised. In summer, the doors and windows are opened, while in

* No evidence has ever occurred to me, either in our winter or summer typhus, to create the slightest suspicion of such a property being incident to the disease. It is contended by Bancroft, with great force of argument, that there is really a genuine typhous fever which has existed immemorially, having a specific contagion, which, under all circumstances, propagates a fever precisely like itself, and that all the simulated fevers, however induced, whether by miasmata, vegetable or animal, or by a high or low degree of temperature or other variations of weather, or, in short, by any conceivable cause, are utterly destitute of such a property.

winter, every aperture is closed, whereby the contagion becomes concentrated, and operates far more actively. The disease, on this account, never prevails in tropical climates. Even when it breaks out on board of a crowded vessel on her passage, the moment she reaches the higher latitudes it ceases. To this point we have the concurrent testimony of Lind, Blane, Bancroft, and many other authorities.

When proceeding from miasmata especially, I have also found, that in character it is more of the synochus, more or less inflammatory in the beginning, and progressively becoming typhoid. It is, also, distinctly paroxysmal, and with tendencies to definite crises, and there is a predominance of bilious symptoms, indicative of greater disorder in the chylopoietic apparatus.

Happily, in a practical view, it is a matter of not much moment, whether we have a just diagnosis or not in these cases. Called to any one of the low fevers, however induced, we shall find pretty much the same train of symptoms, to be treated on the same principles, and cured by the same remedies.

Nearly always, in its primary stages, typhous fever is either congestive or inflammatory, and hence stimulants as well as tonics are precluded. There is a period, however, in the progress of these fevers, which is to be learnt by attention to the pulse and other circumstances, at which bark may be introduced with advantage. It is neither in the commencement, nor at the close of the case. As long as the circulation is

excited, the skin hot, the tongue parched, the eye wild, the head affected, this medicine is inadmissible, and not less so when subsultus tendinum, low delirium, cold surface, and other indications of great exhaustion, supervene. The symptoms of the first stage are most effectually removed by venesection, purging, cold ablutions, or mild relaxing diaphoretics: and those of the final stage, by opium, wine, musk, carbonate of ammonia, &c. Between these opposite extremes, there is a point at which the disease betrays some tendency to give way, or remit, and certainly so if occasioned by marsh effluvia, when bark, alone, or, what I am sure is better, with the serpentaria, and, perhaps, wine, may be employed very beneficially, provided the tongue be moist and the skin relaxed.

Of the use of bark in yellow fever, little is required to be said. When the disease first appeared in this city, in 1793, influenced by the notion of its typhoid character, nearly all our practitioners were led to treat it on a plan into which this medicine entered largely. But they soon escaped from the delusion, and the practice, from that moment, was, by common consent, abandoned. It appears, however, that in the management of the fever in Spain, nearly an exclusive reliance is placed on bark: with the exception, indeed, of a mild emetic in the very commencement of an attack, nothing else is administered. What is the degree of success, we have no precise means of determining, though it is stated generally to be very encouraging. I confess that I do not repose any

confidence in the practice. If the fever be the same as that of our cities, of which there is no reason to doubt, certain it is, that the bark, under no circumstances, can be useful.*

No little difference of opinion prevails as to the propriety of bark in some of the phlegmasiæ, and rheumatism is one of these cases. As this disease, in the acute stages, is, for the most part, highly inflammatory, I cannot conceive that bark can be used without doing very great harm, though the subject is viewed in a different light by some of the English writers. As the result of an extensive experience with it, we are told by Haygarth, "that bark, in the rheumatic affections, is only inferior to mercury in syphilis." After evacuating the alimentary canal, by the antimonial preparations, he begins with it in the small doses of twenty, thirty, or forty grains, repeated every two or three hours. Bleeding he altogether condemns, as having a tendency to render the disease chronic, and protract the cure. To the same effect we have several concurrent authorities, and among these are the equally celebrated names of Fothergill and Saunders, though neither they, nor any one else, go to the extent I have mentioned, in praise of it.

Condemning, as I do, this practice in the early period of the disease, I still know that there are certain

* For a full account of this practice, vid. the work of Aréjula on Yellow fever.

forms or states of it, to which the bark is not inapplicable. It is well remarked by Cullen, that, in many instances, after copious depletion, rheumatism loses the phlogistic diathesis, becomes remittent, and in a considerable degree a periodical disease. The bark, in such cases, he says, is an important medicine, though it requires some caution, as it will occasionally bring back the exacerbations to such a height, as again to demand direct depletion. Generally speaking, it is best suited to the convalescence, to recruit strength, and confirm the recovery.

There is, however, a case of rheumatism, in which the bark appears to be a much less ambiguous remedy. Being generated in low and marshy districts, the disease sometimes puts on distinctly the remittent, or intermittent character, and as, in such situations, the system is commonly reduced, the medicine may be at once resorted to. Examples of this sort have very often come under my care in our public institutions, where the bark has been found indispensable, either as the principal or auxiliary means, in the treatment.

This medicine, in the arthritic affections, has been too much extolled to be overlooked, though I confess that my confidence in its powers is slender. It was freely prescribed by Sydenham, who urges its long continuance, and is also commended by Gregory. There is a writer, who denominates it a "divine remedy."* The cases, however, to which it is appro-

* "Uno verbo, Cortex Peruvianus, in podagra divinum est remedium."—*Hellb.*

priate, have not been very precisely pointed out. It seems to me to be suited best, and perhaps exclusively, to the disease when occurring in an enfeebled state of the general system. To this rule there is one exception. Contracted by exposure to the causes of intermittent, gout is sometimes associated with that disease, or, at least, assumes its guise, and can only be managed, under such circumstances, by evacuations of the alimentary canal and by bark, of the truth of which I have the most irrefragable evidence. To give it in ordinary gout, in the intermission of pain and fever, as suggested by Saunders and Small, is very bad practice in my estimation.

Of the use of bark in the exanthematous affections, not a great deal need be said. In consequence of an opinion once entertained, of its promoting the suppurative process, it was much trusted in the eruptive fever of small-pox. But the practice is no longer continued, it being now an object, as much as possible, to check fever, and lessen the eruption. Cases, however, may occur, where, from debility of the vital powers, the pustules never appear, or very imperfectly, and become confluent, in which it may be advantageously prescribed.

Measles, among us, is a disease nearly always of an inflammatory nature. It is not rare in violent cases to bleed even children, several times, in the early stages of an attack, pursuing the whole antiphlogistic plan at the same time, to the fullest extent. The bark, of

course, under such circumstances, is inadmissible. But, in some of the subsequent stages of the disease, after the more active symptoms have been removed, there is occasionally, it is said, a lingering obscure fever, more or less of the intermittent or remittent type, in which it has been thought useful. No such case, however, have I seen. To putrid or typhoid measles, as described by Watson, I should suppose the bark only appropriate.

As regards erysipelas, the case is much the same. The disease, here, is almost invariably marked by an inflammatory diathesis, and only to be managed by emetics in the first instance, and afterwards, if it prove intractable, by purging, bleeding, and blistering. Elsewhere, it assumes a different aspect. It is a curious fact, that most of the English and Scotch writers describe erysipelas in very opposite terms. By the former, it is represented as a very feeble state of disease, and by the latter, as inflammatory, and their practice is regulated accordingly. The bark is strongly recommended by the English authorities, and we are told, especially by Fordyce, that a drachm of the powder, given every hour, is the most effectual of all remedies. I have already remarked upon the character of the disease, as it appears in this country. There are, however, some exceptions. Erysipelas is often the effect, or concomitant of the depraved habits of the vicious and the drunken. In my attendance on our Alms-House, I have met with instances of this sort, it sometimes prevailing to a great extent in the

crowded wards, among the victims of intemperance, who abound in that institution, and have learnt that the tonic and stimulant remedies are alone calculated to afford relief.*

Of the use of bark, in scarlatina, I have little to say, not having any experience with it in this disease. Cullen observes, that in the species of scarlatina, properly called *anginosa*, there are cases exactly the same as *cynanche maligna*, in which the bark is the chief remedy. "But," continues he, "I maintain, that there is a *scarlatina anginosa*, in which the bark is superfluous, and has been often hurtful."

This is undoubtedly true. Each of these affections may be connected, either with a highly excited, or reduced condition of the system, and a judicious practitioner will shape his remedies accordingly. But in this country the inflammatory form is by far the most predominant, and sometimes demands pretty copious depletion. On the whole, I deem the bark chiefly, and, perhaps, only suited to the advanced stage of the disease, attended by great typhoid prostration, and foul ulcerations of the throat, approaching gangrene.

The bark is prescribed in hæmorrhage, though not always with sufficient discrimination. In the active form of the disease, there can be no doubt of its total inadmissibility. Of this description are the bleedings

* This disease has lately been described by Mr. Copeland Hutchinson, an eminent surgeon, under the title of *Erysipelas Phlegmonodes*, as very prevalent in the British navy. He recommends, in the treatment, bark and the mineral acids.

of the lungs most generally. Even here, it has been directed, though mischievously. Cases, however, of hæmorrhage do exist, in which it is indisputably useful. Hæmoptysis itself is, occasionally, connected with a very enfeebled state of system—and, in common with other tonics, the bark has proved serviceable. Besides which, not to mention such as are incident to low fevers or scurvy, it is suited to menorrhagia, produced or kept up by laxity of the uterine vessels. Combined with the carbonate of iron, it answers well: what perhaps is still more efficacious, is an infusion of it in lime water, in the proportion of two ounces to the quart, and then digested for a few days.

Dyspepsia is one of the complaints of the alimentary canal, in which bark is now much employed. But in my trials with it, I confess that I have been frequently not a little disappointed. Dyspepsia, from an obstructed state of the chylopoietic viscera, certainly would not be benefited by it, and even when dependent on mere debility of stomach, to which it is most appropriate—I have not found it to do well, rather oppressing than invigorating that viscus, and sometimes exciting nausea and general distress.

Yet, occasionally, I have been pleased with its effects, and especially when the stomach is periodically thrown into violent spasms. It has, indeed, very considerable influence over this condition. An infusion of it I have found among the most efficient

measures, in the spasmodic colics of new born infants, so painful and troublesome.

Not less has bark been commended in dysentery. This disease is very improperly placed among the profluvia. In our own country, at least, it is for the most part a phlegmasial affection. Being of this nature, the bark, of course, is inapplicable in the beginning of the disease. But in the advanced state, says a great practical writer, "when some symptoms of putrescency appear, or when the disease has changed in some measure into a diarrhœa, the bark may possibly be resorted to with advantage." My own observations, however, teach me differently, and I hardly know a case of true, unmixed dysentery, even in the typhoid forms, in which, in any stage, or under any circumstances, it is demanded. Generally it proves a most offensive article, nauseating the stomach, and irritating the bowels. The disease, however, occasionally presents itself in the shape of an intermittent, and whenever it does, the bark, according to some, becomes indispensable to its cure. To resort to it in this case is no new practice. It was so prescribed by Morton, the cotemporary and rival of Sydenham, who has since been imitated by Cleghorn, and many other practitioners. The bark is directed to be given in the interval of the febrile paroxysm, and sometimes with opium. I beg leave to refer to what I have already stated of this practice.*

* Vid. Cathartics.

Concerning its use in diarrhœa, I have scarcely a word to say, never having employed it, or seen a case to which, notwithstanding the evidence in its favour, I thought it adapted.

There is hardly one of the nervous or spasmodic affections in which bark is not employed, though, perhaps, in epilepsy it has acquired the greatest reputation. This extraordinary affection proceeds from such a variety of causes, and consequently presents such a diversity of character, that no one system of treatment can be applied to the whole of the cases. I have before insisted on the superior efficacy of the depleting plan; by evacuations of the alimentary canal and occasional bleedings, to every other hitherto proposed. Yet after the end is accomplished for which these measures are employed, the bark and other tonics are indispensably necessary, in some instances, to the confirmation of the cure.

Cullen, who expresses no great confidence in it in epilepsy, entertains a very high idea of it in chorea. Treating of this disease, he says, "there is one convulsive disorder, in which I have found the bark remarkably useful." The reports of such a writer are entitled to much respect. Yet let us not on this account too hastily repose confidence in the powers of the medicine. Whatever these may be, there is hardly one case of chorea, in which its use ought not to be preceded by a persevering course of opposite measures. This is a disease, which, in its early stages, emphatically calls for depletion. Even active purging

will not always suffice, and repeated venesection becomes necessary. Like its kindred affections, it is distinguished by obstinate constipation of the bowels, and a plethoric state of the head particularly.

As a cure for tetanus, I know nothing of the bark. It was used by the late Dr. Rush, who has reported favourably of it. But, as he prescribed it in conjunction with the very liberal exhibition of wine, the results are not at all satisfactory. The same opinion is expressed of it by Morrison, in his late valuable tract on this disease.

Cinchona was, at one time, a popular remedy in pertussis. This curious affection, though ultimately spasmodic, is often, in the primary stages, of a febrile and inflammatory nature. During this state, mercurial purges, venesection, and the antimonials, are our best means. But, as is observed by Cullen, "when the complaint is more advanced, and the force of the contagion is probably gone, and the paroxysms are kept up merely by habit, I am pretty certain, that the bark will then put an end to it, provided only that no congestion has been formed or continues in the lungs." In an earlier stage of the disease bark and castor are recommended by Morris, and it has become a practice in England, to treat it with a combination of bark and the cajeput oil, with what success I do not know.

The bark has been very generally and too indiscriminately directed in asthma. This disease is divided into several species, which, though agreeing in their

leading characteristics, differ materially as regards their origin and even treatment in some instances. To no one of the cases is it calculated, in the slightest degree, to be serviceable during the pendency of an attack. But, as a powerful tonic, it may no doubt be advantageously made to constitute a part of the regular course of treatment, which is intended to corroborate the system, with a view of preventing the recurrence of the paroxysms. To this end it seems to be well fitted, and especially in cases of the complaint attended by flatulence, acidities, and other indications of gastric infirmity.

It remains for me to say something of the powers of bark in the cachexiæ, and first of its use in pulmonary consumption. Though as a general rule this practice is pernicious, there are certain cases of the disease, in which, perhaps, it should not be neglected. Cullen has very precisely described one of these exceptions. "I have," he says, "met with cases, in which, with all the symptoms of phthisis, the exacerbations of hectic were marked with more or less of a cold stage, and regularly, at stated periods, commonly quotidian, but sometimes tertian. In such cases, I have given the bark, with the effect of suspending the paroxysms, and, at the same time, with the relief of almost all the other symptoms of the disease. But," continues he, "I have never, under such circumstances, made a complete cure."

There is, however, a second case of phthisis, or at all events of pulmonary affection, in which the bark

is a less ambiguous remedy. The case to which I allude, is one of much debility, accompanied by wasting of flesh, and a small dry cough, in which is thrown up mucus of a sweetish taste, and not fœtid, as in more advanced consumption. No hectic fever, chills, or sweats exist. The patient, however, lingers in an uncomfortable condition, and fills all who are immediately interested in his fate, with the utmost solicitude. Yet, at this stage of the disease, there is probably no very serious injury of the lungs, these organs partaking only of the general debility of the system. Cases of this description are sometimes relieved by a course of tonics, among which, bark alone, or with myrrh, has been found to be not the least advantageous. This form of pulmonary derangement is often to be met with, and may be that so successfully managed by Sydenham, by riding, and other modes of invigoration. It is here too, that mercury and digitalis prove conspicuously detrimental, by so rapidly exhausting the strength, as to undermine, as it were, even the very props of vitality.

The treatment of scrofula naturally divides itself into such as is applicable to very distinct periods. The first is that, where, without any tumefaction or sore, sufficient evidence of a strumous disposition exists. At this time, purging having been premised, the bark alone, or in union with steel, aided by a change of air, exercise, sea bathing, and a generous diet, constitute the best remedies.

It is scarcely less useful in the second stage, when the disease becomes fixed, and has fully disclosed it-

self, provided the general habit and circulation be feeble. Acting as a resolvent and discutient* it is here that signal benefit has been derived from its union with mercury. To command the advantages, however, of such combinations, we must studiously avoid urging too far the latter article. It is given with a view only to its alterative effect, while we endeavour to sustain the system by the tonic influence of the bark. Even in the ultimate stage of the disease, when large ulcerations, or abscesses, with copious discharges of an illaudable pus, exist, the bark has not always been appealed to without effect. It is, indeed, under these circumstances, that its powers have been most celebrated by many practitioners. Combinations of bark and cicuta, or other narcotics, are here also prescribed with advantage.

In the management of rickets, an affection allied in some measure to certain forms of scrofula, we proceed on pretty nearly the same plan, and hence have often recourse to bark, in various states of preparation, after evacuations of the primæ viæ.

To its efficacy in cancer we have especially the testimony of De Haen and Akenside. Yet it is now ascertained, that, in common with all other modes of treatment, it fails in this intractable affection, though it is frequently serviceable in ulcers of a foul and phagedenic character, connected with a weak and depraved condition of system. It is here exhibited

* Fordyce.

internally, to sustain the general strength; while locally applied either as a wash or poultice.

To some of the forms of dropsy, bark has been thought to be adapted, and more particularly under circumstances of extreme debility, and where the powers of the stomach are much impaired. This may possibly be true. But there is another description of cases, to which it is undoubtedly better suited. Dropsy, of every species, sometimes appears in the intermittent character, either primarily originating in miasmatic districts, or as the effect of long protracted ague and fever—and for this the bark, when properly employed, is one of the most valuable of our remedies.

As might be supposed, it has been resorted to in scurvy. Whatever may be the cause of this complaint, it is mostly one whose essence is debility, in which the digestive organs largely participate. Either as a preventive, or for the cure, in the early stages of it, the bark, I should presume, ought to yield to some other measures, or modes of treatment of more approved efficacy. But, in the progress of a case, symptoms do often arise which demand the use of this very active tonic. It is accordingly much commended by Lind, whose experience was ample, and we have the no less authority of Milman for the fact, of cures having been made in several instances by it alone. In that description of scurvy, which displays itself in the gums, it is admitted to be peculiarly serviceable, used as a lotion, or dentrifice, alone or mixed with myrrh.

In several of the diseases, improperly placed in the class of Locales, the bark forms an important part of the treatment, and one of which is leucorrhœa. The vagina is generally deemed to be the seat of the discharge, and, in consequence of this error, the common practice is exceedingly unsuccessful. It has long been my opinion, that the uterus itself is the part chiefly affected, and that the discharge is a mere vitiation of the menstrual fluid, owing to the wrong or perverted state of the secretory function. To this conclusion I was led, by having remarked, that, in genuine fluor albus, menstruation is uniformly suspended, and never restored while the former continues. Dissections also show, that the uterus is in an unhealthy state, having been commonly found pale, flabby, and relaxed. Discharges from the vagina I am sensible take place, which may be relieved by washes. But these are different from real leucorrhœa.

Conforming my practice to this theoretical view, I always attempt the cure of the complaint by directing the remedies to the uterus, through the intervention of the general system. The bark is one of the medicines, alone, or with steel, which I have employed with most success. Combinations of it and the balsam copaiva, prepared in the form of an electuary, I have also sometimes prescribed with no less benefit in this disease—in old glects, and in discharges generally from weakness of these parts.

What shall I say of the use of bark in gangrene? Of the medicines recommended in this case, none has

acquired so much reputation. Being a powerful tonic, it probably operates by strengthening the system, and thus maintaining in every part the necessary tone for resisting the progress of the affection. Much injury, however, has unquestionably been done by the too general and indiscriminate application of it. Gangrene may be preceded or not by active inflammation. In the former species, none of the tonics or stimulants are proper in the early stages. Copious venesection and purging will much more effectually arrest the tendency to it, and bark can never be useful, till the inflammatory state subsides. It becomes appropriate, when, under such circumstances, we are able to perceive the beginning of a separation between the dead and living parts. Gangrene, however, sometimes originates in debility, or is the effect of a low state of fever, and, this happening, the bark should be early resorted to, and perseveringly continued. Most practitioners seem, however, to admit, that its powers in these cases are improved by uniting with it camphor, carbonate of ammonia, musk, or serpentaria—and that we ought also to bring into co-operation the more stimulating drinks, among which, wine, or strong wine whey, is to be preferred.

The very great success attending the application of blisters in gangrene, has had the effect, in some degree, to throw bark into disuse. But, whatever may be the efficacy of these applications, and no one has more confidence in them than myself, I am still of opinion, that the total rejection of this medicine is improper. The bark may, mostly, be dispensed with

in gangrene from wounds or other injuries, and as, in such cases, there is often inflammatory fever, it might even be mischievous. Yet, as I have before stated, this same affection may be concomitant, or the consequence of constitutional debility, and, surely, here it becomes highly important to renovate, or sustain by general remedies, the actions of the system.

SECTION XVI.

Of the Natural and Pharmaceutical History of Cinchona, &c.

NOTWITHSTANDING much diligence of research, the history of this important genus is still very far from being accurately determined. It is only within a short period, so late as the time of Linnæus, that no more than two species were ascertained, though the number is now extended to twenty-five.* The British Pharmacopœias, however, adopting the arrangement of Mutis,† a celebrated botanist, admit only three, the pale, the red, the yellow, or, in tech-

* There are no less than twenty-five distinct species of cinchona, independent of any additions which we may owe to the zeal of Humboldt and Bonpland. In his London Dispensatory, Mr. A. T. Thomson states, that in a large collection of dried specimens of the genus cinchona in his possession, made in 1805, both near Loxa and Santa Fé, he finds many species which are not mentioned in the works of any Spanish botanist.—*Paris's Pharmacologia*.

† The authority of Mutis is entitled to much respect, since he resided in South America, with the appointment of director of the exportation of bark, for nearly forty years,

nical language *cinchona lancifolia*—*oblongifolia*—and *cordifolia*. Even here, there seem to be doubts, since by some botanists the *lancifolia* is supposed to yield the yellow, and the *cordifolia* the pale bark.

The process of curing the bark is very simple. Being stripped from the trunk and branches of the tree, it is dried by exposure to the sun, and afterwards assorted according to the qualities of the pieces.

There is a very material difference in the appearance of the three kinds of bark.

The *pale* bark is in the form of small twisted twigs, and is covered with a rough coat of a greyish brown colour. If good, its taste is, perhaps, more bitter, astringent, and aromatic than the red.

The *red* bark is in large thick pieces, usually flat, though sometimes quilled: it has a rugged brown coat externally, with a smooth one within of a dark red colour.

The *yellow* bark is in flat pieces, not twisted like the pale, and is smooth externally. Its inner surface is of a light cinnamon colour, approaching to a yellow. In odour, it does not differ from the other species, though it is much more bitter.

The comparative efficacy of the different species of bark is not easily determined, owing to the variable state in which they are found in the shops. At its first introduction, the red was represented as much superior to the pale, and practitioners generally acquiesced in the correctness of the statement. But the very preference which, in consequence, was given to

it, led to so general an adulteration that it lost much of its reputation.

Both of the preceding species, however, have since, to a certain extent, been superseded by the yellow bark. Experiments made, some years ago, with the three species, on a very large scale, in one of the London hospitals, afforded some plausible evidence of its greater activity. These results have since been confirmed by the experience of many practitioners in different parts of the world. It is that, which, according to Humboldt, is most highly appreciated at Loxa, its native position, and we learn from Mutis, who was so conversant with the subject, that, of all the species of bark, it is alone possessed of any direct febrifuge property. Yet its intense bitterness renders it unpalatable, and it is also more apt to excite nausea,—to be rejected by the stomach, or to run off by the bowels. My own observations satisfy me, that the objections alleged against it, are in some degree well founded—and on the whole, when really pure, I consider the red bark, in opposition to the opinion of Mutis, as preferable to the other two species.

In its action, bark displays the peculiar powers of a tonic. There are few sensible effects from it, when it agrees perfectly well with the patient. It is slow, and almost imperceptible in its operation, producing no great alteration in the pulse, or any of the functions of the animal economy. The power, therefore, which it possesses as a tonic, is only evinced by the gradual removal of disease or by the restoration of strength.

Cinchona is most active in substance, and, in the exhibition, is mixed with some fluid, as milk, coffee, wine and water, an infusion of serpentaria, or, what disguises its taste very effectually, a solution of liquorice.

In the cure of fevers, especially intermittents, and such as arise from the same cause, the common mode is to give an ounce of it, in divided doses, of a drachm, or more, in the course of twenty-four hours. But in the West Indies, I am told, they sometimes direct an ounce at once, early in the morning, and withhold its further use altogether for that day.

I know an individual who adopts this plan, with complete success. Yet I have doubts whether it could be generally followed, as few stomachs would probably bear such a dose. The fact, however, is interesting, and should not be overlooked, as cases may occur in which it might be beneficially applied.

The power of bark is undoubtedly improved, in such cases, by uniting with it some other articles, and particularly, I think, cloves, cremor tartar, or the carbonate of potash, or soda. The proportion is about a drachm to the ounce, and the two first may be, in some instances, put in the same preparation.*

* The formula with the fixed alkalies, is as follows :

℞ Cort. peruv. ℥ss.

Rad. serpent. ℥i.

Soda carb. vel Potass. carb. gr. xl.

M. div. in pulv. iv.

The whole of which is to be taken in the course of the day. Of the decided efficacy of this preparation, I entertain not the slightest doubt. It has long had an established reputation in the practice of this city, and I have known it very promptly arrest some of the most intractable cases.

In some patients, such is the irritability of the stomach, that bark in substance cannot be retained even in the minutest dose. In such cases, we resort to it either in decoction prepared by itself, or in union with some aromatic, as cloves, cinnamon, orange peel, or Virginia snake-root. The last of these articles, I think, is to be preferred, since it renders the mixture quite as pleasant to the taste, is as comfortable to the stomach, and perhaps more efficacious. Combinations, too, of this sort will cure intermittents, when the bark alone fails, and are particularly adapted to children and other delicate persons.

Different formulæ are used in this process. The one of which I most approve, requires that two ounces of coarsely powdered bark be put into a quart bottle of water, which being stopped with a perforated cork, is to be placed in a pot of water, and boiled for about an hour. This is a neat preparation, and of considerable efficacy. The dose of the decoction is a wine glassful.

In making the infusion, we put an ounce of coarsely powdered bark into a pint of cold water, to be digested for ten or twelve hours. But it may be much more speedily prepared by substituting boiling water, and probably with greater advantage. It has lately been recommended to triturate the bark with magnesia previously to infusing it, as rendering it stronger, from a more complete solution of the resinous part. The infusion, however, is generally considered as a very feeble preparation, and, except in dyspeptic states

of the stomach, is now little prescribed. I have heard, however, that the Peruvian physicians, as well as those of old Spain, confide much in it, even in the greatest emergencies : and I am inclined to believe, from some recent trials in intermittents, that it is with us too little valued. The dose must be regulated by the retentive capacity of the stomach.

The tinctures are formed either with wine or brandy. The precise formulæ may be had in any of the dispensatories. They are chiefly used in weak states of the stomach, or as an adjuvant to the decoction or infusion, being hitherto deemed preparations of limited value. But we are now told* on the contrary, that the alcoholic tinctures contain the largest proportion of cinchonine, and are exceedingly energetic. This however is a chemical view, which, I suspect, will not be verified in practice. The dose is from a drachm to an ounce

What is called the essential salt, is an extract prepared by macerating the bruised substance of bark in cold water, and submitting the infusion to a slow evaporation.† This is a very useful preparation, and was found to answer exceedingly well in our late intermittents. The chemists, however, whom I have just cited, declare that the extract made from the decoction is very inert, and from the infusion still more so. The dose of the essential salt is ten

* Vid. a paper by Caventou and Pelletier, on the principal pharmaceutical preparations of bark.

† Paris's Pharmacologia.

grains, and may be given in pills, or in solution in cinnamon water or clove tea.

It has, within a few years, been ascertained that the bark contains a salifiable base, in which its active virtues reside. The principle is not precisely the same in the several species. The pale bark furnishes what is called *cinchonine*, and the yellow *quinine*, both of which are found in the red, and in larger quantity : hence, independently of other considerations, it must be the best.

The sulphuric acid added to this alkaline base forms a neutral salt of great activity and usefulness. We had learnt that the sulphate of quinine was in high repute in Europe, particularly in the Parisian hospitals, in the cure of intermittents, in consequence of which it was greatly employed in the treatment of that disease, during its very extensive prevalence among us the present season, and with such success, as nearly to supersede all other remedies. I have heard of no difference of opinion on the subject, every practitioner of this city, on the contrary, fully concurring in the vast superiority of its powers. It is given in pill, or solution in cinnamon water, or some other aromatic fluid, to which a few drops of sulphuric acid may be advantageously added, as rendering the solution more complete. The common dose is a grain, which is supposed to be equivalent to a drachm of crude bark, to be repeated more or less frequently, according to circumstances. I have, however, often given double

this quantity at a dose, so that the aggregate amount—ed to a scruple a day—and, on one occasion, knew eight grains to be given at once, through mistake, which effectually arrested an obstinate intermittent, without inducing any distress of stomach, or other inconvenience. Its use is restricted to the apyrexia, and in this, as well as every other respect, we conform to the rules adopted in relation to the crude medicine. Distinct from the minuteness of the dose, and facility of exhibition, this preparation is recommended by its effecting more prompt and thorough cures, so that relapses, before exceedingly frequent and troublesome, rarely happened after the introduction of it into the treatment of the disease.* It has, moreover, been found to display the same powers, in many of the cases in which the ordinary preparations of bark have been applied, as remittent and low continued fever, neuralgia, cephalalgia, sciatica, and paroxysmal affections generally. Lately Dr. Elliotson has shown, that the pure alkali, quinine, is as effectual, or nearly so, in the same dose, as the sulphate in intermittents, of which I should have doubted, on account of its insolubility, had not the fact been so well attested.†

To correct some inconveniencies occasionally produced by the bark, in the ordinary forms it is com-

* For a full account of the discovery of the Cinchonine, vid. Philadelphia Journal of the Med. and Phys. Sciences, vol. ii.

† Vid. Medico-Chirurg. Trans. vol. XII. part 2.

bined with other remedies. When it excites vomiting, or oppresses the stomach, we add an aromatic as formerly stated—when it purges, opium—when it induces constipation, rhubarb—and where there is much acidity of stomach, magnesia, or small portions of the mineral or vegetable alkali.

Notwithstanding, however, the various means devised to secure the due administration of this medicine, cases are of common occurrence, in which it cannot be given by the mouth. This is owing most generally to the irritability of the alimentary canal, by which it is either at once rejected, or runs off so speedily, as to leave no salutary impression. It is usual, under such circumstances, to resort to injections. Except in some very few instances among children, I have never employed it in this way—it being difficult to persuade adults to acquiesce in the repetition of the enema, as often as is necessary to the attainment of the effect. Though I have perhaps done some good with it, I am not prepared to state, that it is adequate to the arrest of intermittent fever, or to the cure of any very obstinate disease.

Besides the objection to the practice just mentioned, there is another, arising from the uncertainty of the retention of the medicine, and this objection always exists, in a greater degree, when the bark is most demanded—the bowels being either already irritable, or becoming so, after a short time, by the frequent introduction of the pipe. The best formula,

for such an injection, is to entangle two or three drachms of the powdered bark, in the mucilage of starch, flax-seed, or gum-arabic in the smallest quantity, so that it may operate as slightly as possible, as an extraneous stimulus : and, to do away irritability, it is proper to add a certain portion of laudanum each time.

In the external application of bark, different plans have been proposed. Cataplasms of it, put over the stomach, are said to have proved serviceable, and baths of a warm decoction, either as a pediluvium, or large enough for the immersion of the whole person, still more so. As a remedy in intermittent fever, I have not tried either of these measures. They probably might be useful, and I have learned, indeed, they have actually proved so, in the hands of some practitioners.*

Bark has also been applied to the surface in a dry state. It is said by Darwin, that if the powder be strewd pretty abundantly in a bed, in which a patient lies, it will cure ague and fever. To believe this,

* My employment of the bath has hitherto been confined to restraining inordinate vomiting in cholera morbus, or the violent retchings of malignant fever—and to some cases of chronic diarrhœa, and the last stage of what is called the summer complaint in children. To meet the indications in these diseases it is well calculated, and will sometimes afford relief under very unfavourable circumstances. This latter practice, I believe, originated with me. But the bark of the black oak of our country, such as is furnished by the tanners, I have preferred, as well on account of its cheapness, as its being more effectual.

even on such high authority, requires a considerable stretch of credulity. But when applied in a different way, quilted in a pad, and worn around the body, it has certainly produced this effect. Doubts have been expressed whether the bark jacket, as it is called, is of any utility, except in the case of very young children. Though best adapted to such cases, I have also witnessed advantages from it in grown persons, and especially very delicate women. Yet it will fail in a great majority of instances, and on all occasions proves a very miserable substitute for the bark exhibited internally.

The manner in which these external applications act is easily to be explained. Tonic impressions made on the surface are imparted, through reverse sympathy, to the stomach, which, being thus invigorated, is rendered capable of resisting the insurrection of the chain of associated motions, constituting intermittent, the primary link of which chain commences in that viscus.

In concluding what I had to say on this important article, I cannot help lamenting that so little care is taken by our apothecaries to procure it genuine, and of the best species. Except some small parcels, I doubt whether any of this description could have been had in this city for the last twenty years,—and such has been the case, probably, throughout the United States. Carthagena bark is chiefly vended, which is about one tenth part of the price of the real

Peruvian medicine, and is shown to be different in its chemical composition, and by a series of clinical experiments, absolutely proved to be destitute of febrifuge properties. These investigations have been recently made in the Parisian schools, and are most impressively admonitory to us. In the practice of this country so little confidence has been reposed in bark, that for many years, it ceased in a great measure to be used, every one complaining of its inefficacy, and especially in the febrile affections.

The redress of this, as well as many other similar grievances, is now, however, undertaken by the newly-instituted College of Apothecaries of this city, by whom, from the activity, intelligence, and integrity of the leading members, a prompt and thorough reformation will, I have no doubt, be accomplished.*

* *Incompatible substances.*—Precipitates are produced by the salts of iron, sulphate of zinc, nitrate of silver, oxy-muriate of mercury, tartarized antimony, solutions of arsenic, &c.

SERPENTARIA VIRGINIANA.

The serpentaria belongs to a family of plants, to which the title *Aristolochia* is affixed, and Linnæus, in consequence, denominated this article, *aristolochia serpentaria*. But I prefer, on many accounts, the good old name of *Virginia* snake-root, and shall accordingly retain it.

This is a perennial plant, a native of the United States exclusively. The root is the only part used. It has an aromatic smell, and a pungent bitterish taste, evidencing in its effects, the mixed qualities of the stimulant and tonic. It is, moreover, actively diaphoretic, and sometimes promotes the urinary secretion.

Endowed with these valuable properties, it has of course been employed pretty extensively. Being, however, commonly united with the bark, I have already, in the history of that article, applied it to most of the indications which it is competent to meet.

Among the more early uses of the medicine, was its application to the cure of intermittent fever. Whether it is adequate alone to this purpose, does not clearly appear. But it certainly proves an important adjuvant. It was used by Sydenham, in conjunction with wine, to prevent the recurrence of the paroxysm, and, from his account, not without advantage. As a general rule, he says, that in all cases,

where it is expedient to combine wine with bark, the effect will be much increased by adding serpentaria. The correctness of this observation has been fully confirmed by subsequent experience, and it is now very much the practice to unite these articles in the low states of disease, whether ordinary typhus, or the exanthematous fevers.

To remittent fever, serpentaria seems still better adapted, having in many cases, an indisputable superiority over the bark, inasmuch as it is rarely offensive to the stomach, and may be given, without injury, in those obscure states of the disease, where the remission is not readily discernible.

As a popular remedy, more particularly, it is much employed in the secondary stages of pleurisy. After bleeding, it is the practice, in many parts of our country, to resort to a strong infusion of this article, with a view of exciting perspiration, and the result is said to be generally favourable. Catarrhs, rheumatisms, and other winter affections, incident to rustic life, are managed in the same way.

In that species of pleurisy, properly designated by the epithet bilious, I have repeatedly had occasion to recur to the serpentaria, and always with more or less utility. I know not, indeed, any modification of disease, in which it displays its powers more advantageously. The bilious pleurisy has all the characteristics of pneumonic inflammation, with the addition of some of the symptoms incident to autumnal fever. There is considerable head-ache, much gastric dis-

tress, and almost always violent vomitings of bile. It differs also from ordinary pleurisy in having less activity of inflammation, and consequently in not bearing the same extent of depletion. The system, indeed, will often be evidently depressed by one or two moderate bleedings. In this case, the practice commonly pursued, is, after the detraction of a comparatively small portion of blood, and the thorough evacuation of the alimentary canal, to administer draughts of the infusion of serpentaria, in order to excite copious diaphoresis.

As an epidemic, the bilious pleurisy prevailed in the neighbourhood of this city many years ago, and, I am informed, was managed most successfully by the practice which I have detailed. It is not, however, one of the ordinary complaints of the climate of the middle states. The cases which I have seen of it, have, for the most part, occurred in persons from districts of country exposed to marsh exhalations, and who have previously had autumnal fever.

I have only one more remark to offer on the properties of this article, which is, that an infusion of it is admirably suited to check vomitings, and to tranquillize the stomach, particularly in bilious cases. It is by virtue of this property, probably, that it has acquired some repute in dyspepsia.

The serpentaria may be given in powder or infusion, the dose of the former being thirty grains, and of the latter an ounce. It is less active in decoction,

and when boiled for any length of time, becomes entirely inert.

EUPATORIUM PERFOLIATUM.

Of this article I have treated under the head of diaphoretics, where it is mentioned, that to the power of exciting vomiting and sweating, is added that of a diuretic, and especially a tonic. It is deserving of remark, that its operation depends much on the mode in which it is exhibited. As a warm beverage, either in infusion or decoction, it will puke, or stimulate the surface or kidneys. But in cold decoction, or, what answers better, in powder, it produces its tonic effects only.

I have lately had put into my hands a very well-written tract, in which the medicinal properties and applications of this article are fully discussed.* By the reports of the writer, it appears, that in the Public Institutions of New York, it has been extensively employed in intermittent, remittent, and yellow fever, in typhous pneumonia and catarrhal fevers, in several cutaneous affections, in dropsies, and for the removal of mere debility. By properly regulating the administration of the medicine, it has, according to him, fulfilled successfully all these diversified indications. Making due abatement for the confidence in

* Anderson on the Eupatorium, &c. &c.

which new and favourite remedies are always announced, I entertain little suspicion of the accuracy of these accounts. My own observations, together with communications which I have received from highly-respectable sources, would, indeed, partly confirm the preceding statement of the efficacy of this medicine, and especially in remittent and intermittent fever.

To these affections it seems to be particularly adapted, inasmuch as, having the united properties of a diaphoretic and tonic, its use may be continued in the successive stages of the paroxysm, as well as during the apyrexia.

EUPATORIUM PILOSUM.

This is a second species of this numerous family of plants. It is, perhaps, better known to many by the provincial title of "*wild horehound*." The plant grows in almost every section of our country, and is fully incorporated among the domestic remedies. By the president of the Medical Society of Georgia, it is said, that "it serves as an excellent substitute for the Peruvian bark, and, indeed, that among the planters in or near the sea-board, it supersedes the bark in the cure of fevers. It is tonic, diaphoretic, diuretic, and mildly cathartic, and does not oppress the stomach, as the bark is apt to do—hence it may often be exhibited where the cinchona is inadmissible. It is usually given in the form of infusion : One ounce of the

dried leaves, infused into a quart of water, may be taken daily, in doses of from two to four ounces every hour or two. It may be advantageously combined with Peruvian bark, and, though it may sometimes fail of producing the desired effect, I think that it well deserves a station among the articles of the *materia medica*.”

In this sentiment I entirely coincide. Though my own practice has not afforded me many opportunities of using it, I distinctly recollect that in Virginia, my *native state*, it was a common and an efficacious remedy in the cases mentioned. To these I may add, in the catarrhal affections, or obstinate coughs—and also as a bitter tonic, in weak states of the stomach. The popular mode of using horehound is, in most cases, as a tea. But for coughs it is made into a syrup or candy.

CHIRONIA ANGULARIS.

Of the centaury we have the above species, which is not inferior to the European.* It is a beautiful annual plant, growing abundantly in the middle and southern states, every part of which is medicinal, though the flowers possess most efficacy. It is a pure bitter, with some little aromatic flavour, neither unpleasant to the taste, nor offensive to the stomach—

* *Chironia Centaurium*.

and is resorted to by every description of practitioners, regular and irregular, in our intermittent and remittent fevers. Like some other articles, it has the advantage over the Peruvian bark, of being susceptible of employment in every stage of these diseases. The usual mode of prescribing it is in strong infusion, of which copious draughts are directed to be repeatedly taken.

CORNUS FLORIDA,

• ET

CORNUS SERICEA.

By our forests we are supplied with the above species of cornel or dog-wood, each of which is a useful tonic. Both of these articles have been ably investigated by a graduate of our school.* It appears on analysis, that they present the same results as the Peruvian bark, and that their effects on the system are essentially similar, though rather more stimulating.

The cornus florida is too familiar to require any designation. But the sericea is probably less known by this title. It is the shrub which is vulgarly called the red dog-wood, the red willow, the red rod, or swamp dog-wood, and grows exclusively in marshy or damp soils.

* Dr. Walker, of Virginia

Closely allied to the Peruvian bark, in their sensible and chemical properties, it is presumable that these substances might be applied to the same extensive set of cases, though no such application has hitherto been made. The first is much employed as a substitute for bark, in ague and fever, and I suspect its use is nearly limited to this case. Of its efficacy I entertain no doubt, though I have not had much experience with it. Concurrent accounts from many distinguished practitioners have fully satisfied me on this subject.

The inner bark of each species of cornel may be exhibited in all the forms in which the Peruvian medicine is used, and nearly in the same dose.

PRUNUS VIRGINIANA.*

This is a native tree of peculiar and valuable powers. The bark of the trunk, or of the root, which is still more active, is the part used. To the taste it is a mixture of the bitter, astringent, and aromatic, resembling not a little the flavour of the peach kernel. It, at first, produces the effects of a narcotic stimulant, probably from the prussic acid it contains, which, however, are followed by more permanent impressions.

This medicine has acquired, and I believe deservedly, no inconsiderable reputation in a variety of dis-

* *Cerasus Virginiana* of Michaux.

cases. To the cure of intermittent fever was among the earliest applications made of it. Though in this case I have not much knowledge of it, I have heard it well spoken of by some respectable practitioners. My experience with it is chiefly confined to the pulmonary affections. It is suited to the hectic of phthisis, and, perhaps, equally so when proceeding from other causes, as it is reputed to have done good in psoas abscess attended with this species of fever, and colliquative sweats. Nor is this all. By a judicious administration, we shall occasionally find, in consumption, the cough relieved, diarrhœa restrained, profuse perspirations abated, appetite invigorated, and the general strength sustained, though it is still a mere palliative of the disease.

In several instances of asthma, which have come under my care, some relief was procured, by the long and persevering use of the medicine. It was prescribed in the two species of the complaint, the pituitous and spasmodic, without any regard to the distinction between them, and I am not sensible with any material difference. Being a tonic, it is to be given in the intervals of the paroxysms, so that, by renovating or supporting the tone of the system, it may ward off the repetition of attacks.

Much has been said of this medicine in dyspepsia, and in the chronic stages of dysentery, diarrhœa, and cholera infantum, and, though I have never tried it in any of these cases, I think it likely that it might be beneficially done, under the same circumstances in

which we resort to the Peruvian bark, and other corroborants.

It may be given in substance, or tincture, or infusion, and in rather a larger dose than the same preparations of the Peruvian bark. The decoction is a less active preparation.

LIRIODENDRON TULIPIFERA.

This is one of the noblest trees of our forests, distinguished alike by the amplitude of its dimensions, and the beauty of its foliage and flowers. The bark of the trunk, branches, and roots, has an aromatic bitterness, and is represented as possessed of many medicinal qualities. It is said to be a stimulant and tonic, sometimes proving diaphoretic and diuretic, and in these relations has been prescribed in intermittents, dyspepsia, rheumatism, gout, dysentery, &c.

Of it I know little, having never employed it. But if deserving of attention, I suspect it is as a tonic in intermittents.

It is prescribed in all the modes of the Peruvian bark, and in similar doses.

CUSPARIA FEBRIFUGA.

This tree grows in South America, the botanical history of which was unknown till that country was

visited by baron Humboldt, who, having ascertained it, conferred on it the above title, by which it is now generally recognised. It was previously called *angustura*. The bark comes in small wrinkled pieces, having an unpleasent smell, and a taste bitter and slightly aromatic. It was originally introduced as a remedy for intermittent fevers, and acquired so much reputation, that it promised even to supplant the Peruvian bark. But more enlarged experience corrected these sanguine anticipations, and, as often happens, medical opinion, with respect to this article, ran into the opposite extreme. Its character was so rapidly depressed, that, though only brought into the *Materia Medica* in the year 1778, we, for a considerable period, heard nothing of its employment.

Lately, however, our attention has been recalled to it, by some of the most respectable of the English practitioners. It is particularly recommended in the low states of fever, by Brande and others, who insist that it is to be preferred to the Peruvian medicine—as, while possessing the virtues of that article, it is not so apt to offend the stomach, or to excite purging. It is also extolled in chlorosis, pertussis, periodical head-ache, dyspepsia, and in a variety of other gastric and nervous complaints. In the affections of the stomach, especially, it is pronounced, by Pearson, to be incomparably superior to all the vegetable tonics.

My own experience teaches me nothing of its powers in any of the preceding cases, having only used it in chronic diarrhœa, and in the last stages of dysen-

tery. It here answers pretty well as an astringent, though I am not sensible of deriving any extraordinary advantages from it. Yet I repose confidence in it, and would be pleased to see it subjected to fairer and more extensive trials than I have made. It may be administered in infusion, decoction, tincture, or powder. The last mode is best, and the dose is from a scruple to a drachm, in water or any other liquid.*†

COLUMBA.

Of the plant which supplies this article, no botanical account has been obtained on which we can rely. It is said by some to be a herbaceous vegetable, and most probably a species of *Frasera*. By others it is more positively asserted to belong to the genus *menispermum*. Being brought from Columba, a city in the island of Ceylon, it is designated accordingly. The root only is used, which is imported in small pieces, possessing some aromatic odour, and is intensely bitter.

* There is occasionally to be met with in the shops, a bark called *fine angustura*, though of a different species, which is a most active poison, containing an alkaline element, on which the term *Brucine* has been bestowed by the chemists.

Paris's Pharmacologia.

† *Incompatible substances.*—Sulphate of iron—sulphate of copper, oxy-muriate of mercury, nitrate of silver—tartarized antimony—subacetate and acetate of lead—potash, and, perhaps, the mineral acids—infusion of galls, and yellow bark.

Like the articles generally of the class to which it belongs, columba was once tried in intermittent and remittent fevers, and though perhaps not altogether ineffectual, it proves comparatively so inferior, that it has ceased to be employed. The only case of fever to which, at present, it is thought applicable, is that of hectic, and here it is, certainly, sometimes, prescribed with advantage.

It is in the various complaints of the alimentary canal, acute, as well as chronic, that it seems to display its greatest powers. By the medical writers of warm climates, and particularly of the East Indies, it is represented as a valuable remedy in checking the violent vomitings incident to bilious fevers and cholera morbus, and is also extolled in diarrhœa and dysentery, in each of which cases I have employed it beneficially. To the later stage of dysentery, however, after pain and inflammation have ceased, is it only adapted. Yet I have derived still more advantage from it in the cholera of children, under similar circumstances.

Cullen speaks highly of this medicine, in dyspepsia, and I believe that his report relative to it has been fully corroborated. It is given alone, or with other substances, as the preparations of steel, or aromatics—or with purgatives, as rhubarb, as circumstances may require. The ordinary mode of exhibition is in powder, infusion, or tincture, the first of these forms being preferred. The dose of the powder is from

half a drachm to two drachms, and of the other preparations in the same proportions.*†

GENTIANA LUTEA.

This is a plant native of several countries of Europe, which is found, I believe, in no section of the new world. It furnishes one of the purest and most valuable of the bitter tonics, though it was pronounced by Haller to be deleterious. The root is the only medicinal part.

Gentian was once employed in intermittents, though with what success is not well determined. Cullen seems not altogether to reject it, and Lind speaks decidedly in its favour. The probability is, that it does not deserve much attention.

Its claims are higher in debilitated states of the alimentary canal, as in dyspepsia and diarrhœa, and par-

* Not long ago, a plant which is commonly considered as a species of columba, was discovered in the vicinity of Marietta, in the state of Ohio. It appears, from the most authentic accounts which we have had, that it is large and well-proportioned, of seven or eight feet in height. The plant is triennial. Experiments are said to prove it to be equal, if not superior, to the imported. But of this I am not entirely persuaded, as, from the specimens which I have seen, the root is of a lighter colour, and seems to have much less of the bitter principle. The properties of plants, however, are much influenced by soil, position, and culture—and, when more attended to, perhaps our native medicine may be improved.

† *Incompatible substances.*—Precipitates are produced by an infusion of galls and yellow bark—by sub-acetate and acetate of lead—oxymuriate of mercury, and lime water.

ticularly in the former case. Being found very often to excite appetite and promote digestion, it is hence a leading ingredient in most popular "*bitters or stomachics*," as well as in the officinal preparations of this nature. It was formerly commended in the calculous and arthritic affections, and enters largely into the composition of the famous *Portland powder*. Commonly, it is prescribed in tincture or infusion, though it may be given in powder, in the dose of twenty or thirty grains.*

QUASSIA EXCELSA.

The bitter quassia, as it is usually called, is a tree of some size growing in Surinam, and along the coast of South America. Every part of it is intensely bitter, though the wood is preferred as a medicine. To *Quassi*, a West India negro, so called, who first used it in fevers, it owes its title. Its powers, at one time, were highly appreciated in the several forms of febrile affection, intermittent as well as continued. But it has so nearly lost its character, that it is never employed

* The *Portland Powder* consists of equal quantities of the roots of *gentian* and birthwort, the tops and leaves of germander, ground pine, and lesser centaury, powdered and mixed.

Brodum's Nervous Cordial consists of the tinctures of *gentian*, *columba*, cardamoms, and bark, with the compound spirit of lavender and wine of iron.

Stoughton's Elixir is a tincture of *gentian* with the addition of *serpentaria*, orange peel, cardamoms, and some other aromatics.

for such purposes, except as a tonic in convalescence, or to check bilious vomitings. Nor has it more reputation in gout or gravel, or the neuroses, in which it was formerly much commended. The only cases, indeed, besides those mentioned, in which any great degree of confidence is reposed in it, are those of debility of the stomach and bowels, it frequently proving useful both in dyspepsia and diarrhœa. It is generally prescribed in infusion. But pills made of the extract are sometimes directed.

QUASSIA SIMAROUBA.

Of this species of quassia I have little to say. It is found in St. Domingo chiefly, and like the preceding article, was once esteemed in the febrile affections, particularly in intermittents. But it can hardly now be considered among the remedies in these cases, and is only retained as being occasionally useful, from its astringency, in diarrhœa, and the advanced stages of dysentery. The bark of the root is employed, which may be given in powder, in the dose of twenty or thirty grains, or in infusion, the latter answering better.

SWIETENIA FEBRIFUGA.

This is a species of mahogany, so called after Van Swieten, which was greatly extolled in intermittents

by Roxburgh, who first brought it into notice. But subsequent experience has not realized what he said in its favour, though it may be suited, as he states, to the disease in the East Indies. Being astringent, it is sometimes substituted for the Peruvian bark, where the latter purges, and would probably be useful in some of the bowel affections. The bark is the medicinal part, and may be exhibited in the dose of half a drachm in substance. It is also given in tincture, decoction, and infusion.

CROTON ELEUTHERIA.

Cascarilla is chiefly imported from the West Indies. It grows, however, in the southern extremity of the United States.

This article, for a long time, maintained great repute in different kinds of fever. During the early part of the last century, when the Peruvian bark was so strongly resisted, by the disciples of Stahl particularly, it nearly supplanted that article. It has not, for many years, been generally employed in these cases, and I suspect, at present, it is underrated. Endowed with several of the leading properties of serpentaria, it is reasonable to suppose, that it might be salutary under similar circumstances, and especially as an adjunct to the bark. In hectic, I cannot doubt its efficacy, having often witnessed it—and the analogy be-

twcen these two forms of fever is sufficiently close to warrant its extension to the former case.

It is also serviceable in the complaints of the primæ viæ, as dyspepsia, flatulent colic, diarrhœa, the advanced stages of dysentery—as well as in the gangrenous thrush of children.

The bark only is used, and the dose, in powder, the best mode of exhibition, is from a scruple to half a drachm. But it is also given in tincture and decoction, the last of which is objectionable, since the aromatic principle is dissipated in the process.

ANTHEMIS NOBILIS.

Chamomile constituted an article of the materia medica in the earliest times. We have evidence of its having been employed by the Egyptians, and by the immediate successors to their knowledge.

Except the root, every part of the plant is medicinal, though the flowers are preferred. These are agreeably bitter, with considerable tonic power, and were once supposed to be efficacious in fevers, more especially of the paroxysmal type. But rejected pretty much in such cases, they are now chiefly prescribed as a *stomachic* to invigorate appetite, and restore strength in the convalescence of acute diseases, or in chronic debility, especially of the digestive organs. With this view they are usually directed in *cold* infu-

sion, though sometimes in powder, which does not answer so well.

To excite diaphoresis in the early stage of catarrh, and other winter affections, a *weak* warm infusion is much resorted to in domestic practice, and a *stronger* preparation of the same kind, to promote vomiting, alone or in aid of an emetic.

Externally, they are used as a fomentation or poultice, to allay inflammation, and to discuss or bring to maturation, phlegmonous swellings.

Neither the essential oil nor tincture of chamomile have I employed. But they are represented as carminative and antispasmodic, well adapted to flatulent colic, &c.*

CARBO LIGNI.†

Charcoal has considerable tonic powers, especially on the alimentary canal. I have employed it in ordinary dyspepsia, though not enough to convince me of its great utility. Yet, as formerly stated, it is serviceable in cardialgia,—in pyrosis,—in the relaxed states of the stomach attended with frequent recurrences of vomiting,—as well as in some stages of dysentery, where the stools are highly acrid

* *Incompatible substances.*—Nitrate of silver—oxymuriate of mercury, the soluble preparations of iron—acetate and sub-acetate of lead—solutions of isinglass—infusion of yellow Peruvian bark.

† Vid. Purgatives.

and offensive. To the latter case, it would seem to be adapted, since it entirely divests, as I have remarked myself, the excrementitious discharges of their bad smell and acrimony.

In small doses, it is, moreover, an astringent, or, in other words, operates on the bowels, in restraining inordinate evacuations, precisely in the same manner as the cretaceous preparations do, and might, on this account, be useful in diarrhœa, and other atonic fluxes. May not, too, something be expected from it, in those low states of disease, formerly called putrid? Experience has already demonstrated its efficacy in intermittent fever, given in drachm doses, during the apyrexia, observing, in every respect, exactly the same rules as in the employment of Peruvian bark. Distinct from what has been said elsewhere of its powers in this disease,* there is in my possession, some very strong evidence to the same purport. In that form of

* In one of the late numbers of the Edinburgh Medical and Surgical Journal, there is an account of the successful use of charcoal in the ague and fever, by Dr. Calcagno, of Sicily. On the authority of this physician, the remedy has been pretty extensively tried in the same disease, by Dr. Calvert, physician of the British forces at Palermo, with a full confirmation of its powers—and who has also collected, from his medical correspondents, some additional proofs, to the same effect. He further states, that it has been beneficially employed in intermittent fever, blended with dysentery—and it moreover appears, according to him, that it removes the bitter and disagreeable taste in the mouth, allays sickness whenever there is a tendency to vomit, and sometimes stops the vomiting when it has occurred, promotes appetite, and assists digestion.

intermittent complicated with dysentery as described by Moreton and Cleghorn, it appears to me, that it must prove a valuable addition to our remedial means,—and such an addition is much required—the bark having been found, notwithstanding what is stated in its favour, by these writers, to be totally inadmissible, as it always, if it be retained at all, aggravates the bowel affection, without making any impression on the fever.*

SPONGIA USTA.

Charcoal is prepared from a variety of substances, each preparation having some peculiarity of proper-

* Not long since it was confidently stated by M. Bertrand, a French physician, that by experiments he had ascertained, that charcoal is a complete antidote both to arsenic and corrosive sublimate. As we were not in possession of the means of counteracting, especially the former of these poisons, this communication attracted great attention, so much so, indeed, as to be circulated through the most popular vehicles of intelligence even of this country. But, on repetition of the experiments by other persons,* it was found, that charcoal has no such property : affording another instance of the fallacy of medical testimony, and of impositions of this sort, so constantly practised upon the public.†

* Vide Orfila on Poisons.

† After the above article was written, I had put into my hands, the edition of the Edinburgh Dispensatory for 1816, where I find it stated, that two German writers, Kahneman and Inch, had mentioned that charcoal removes the fætor of dysenteric stools, and that it is useful “in itch, worms, florid phthisis, and other atrophies.” Externally applied in form of a paste, I have also heard, it will cure tetter, and similar affections.

ties. The burnt sponge is one of those, which still retains, and usefully, a place in the shops. Cases of scrofula have sometimes been benefited by it, and it constitutes, at present, one of our chief remedies in bronchocele, of which cures have undoubtedly been effected by its long and steady exhibition. It has hitherto been prescribed in the form of lozenge, or an electuary, to the amount of several drachms in the course of the day—and its effects were ascribed to the carbonate of soda, or the phosphate or carbonate of lime, which enters into its composition. But the reputed efficacy of iodine, in this disease, has led to the supposition, that it acts by virtue of this principle, which it is said also to contain.*

FULIGO LIGNI.

Wood soot is another variety of charcoal, differing from the rest, in this, among other respects, that it is intensely bitter, owing to the sulphate of ammonia which belongs to its composition. It is tonic and considerably antispasmodic. The soot tea is used with advantage in the flatulent colics of new born infants, and sometimes not less so in spasmodic affections of the stomach, in adults. There was formerly a tincture of soot kept in the shops.

* This, however, is denied by M. Hensmans, in a paper read before the Medical Society of Louvain, at its sitting on the 16th January, 1821. Vid. Phil. Med. Journ. Vol. V.

Within the last few years, a popular remedy, long known among us, composed of ashes and soot, as stated below,* has acquired very great reputation even in regular practice. This is given in dyspeptic states of the stomach, attended with acidity, and, as an ordinary effect, spasms. The dose is a small wine-glass full, to be taken *after each meal*. Why it should be more useful than the usual alkaline mixtures it is not easy to explain. But of the fact there is no doubt.

IODINE.

This is an elementary principle obtained from a variety of substances, of which different preparations have of late been applied to remedial purposes. Coindet of Geneva is entitled to the credit of the discovery of its medicinal properties, as well as of its appropriation to the treatment of certain diseases. It is prescribed chiefly in tincture, composed of forty-eight grains of iodine to an ounce of alcohol—and in the form of a salt, the hydriodate of potash, forty-eight grains of which are dissolved in an ounce of water. The dose of each of these preparations is ten drops, three times a day, gradually increased to double the quantity.

The earliest application of this article was to the cure of bronchoccele, and soon after extended to scrofu-

* The common directions require one quart of clean hickory ashes, and half a pint of soot, on which a gallon of boiling water is to be poured, to remain twenty-four hours, and then decanted.

la, amenorrhœa, and leucorrhœa, in each of which cases much testimony might be collected to its efficacy. Yet what is the precise degree of its value, I am unable to determine. The few trials made with it in this city, principally in scrofula, have not been encouraging, and such seem to be the reports both from France and England. Yet in Germany, and other parts of the continent, it maintains its reputation, or at least many respectable practitioners continue to express their confidence in it. That it is a most active agent, productive of a high degree of vascular action and general excitement, is universally admitted—so much so, indeed, that some of the Swiss governments have by edict forbidden its employment, except under severe restrictions. Nor does this proceed merely from popular alarm, since eminent practitioners, such as Solis of Vienna, and Nordhof of Aubone, have expressed their apprehensions, in a caution to the profession, in the employment of it. To obviate these objections, as well as such as arise from the uncertainty of the preceding preparations, owing to their liability to decomposition, especially the tincture, Coindet has recently recommended the external application of the hydriodate of potash as an unguent for the removal of bronchocele, and strumous swellings, with an assurance that he has found it to answer as well as the internal administration of the article: This ointment consists of half a drachm of the salt, and one ounce of purified lard, with which frictions are to be made with a portion of the size of a nutmeg, morning

and evening, on the tumour, and along the course of the lymphatics.

MYRRHA.

Myrrh is a gum resin, which Mr. Bruce, the Abyssinian traveller, has rendered probable is afforded by a species of the sensitive plant, though the point is not accurately ascertained. It is one of those articles possessed of diversified powers.

As a tonic it is given in cases of debility, and particularly in such as are supposed to originate from, or connected with visceral disease. It has long had considerable reputation in retention as well as suppression of the menses dependent on flaccidity of system—and scarcely less in the ulcerative stage of phthisis, with hectic fever—as well as in asthma, tussis senilis, &c. The confidence reposed in its deobstruent powers early led to its use also in obstructions of the mesenteric and other glands, from a strumous condition. In low fevers, and in ordinary intermittents, it has been prescribed—and in several of the neuroses, as hysteria, epilepsy, chorea, &c.

Externally, it is directed as a lotion for foul ulcers—in scorbutic affections of the gums,* and as a gargle in gangrenous sore throat.

* *Hudson's Preservative for the Teeth and Gums.* Equal parts of tincture of myrrh, tincture of bark, and cinnamon water, to which are added arquebusade and gum arabic.

It is given in powder, tincture, or aqueous solution. The dose of the former is from ten to fifty or sixty grains—and for most purposes it answers best. Myrrh, however, is rarely prescribed alone. As a tonic, simply, it is united with bark and the chalybeates—as a deobstruent, with aloes, the sulphate of iron, &c.—and as a pectoral or expectorant, with the fixed alkalies, the sulphate of iron, &c. The mixture of Griffith, so much extolled in hectic fever, is of this nature.*

Greenhough's Tincture for the Teeth. The following receipt is given on the authority of Mr. Gray. Of bitter almonds 2 oz. Brazil wood and Cassia buds, equal parts, half an ounce; root of the Florentine iris, 2 drachms; of cochineal, salt of sorrel, and alum, equal parts, 1 drachm; rectified spirit, 2 pints; spirit of horse radish, half an ounce.

Ruspini's Tincture for the Teeth. This consists of the root of the Florentine iris, eight ounces; cloves, one ounce; rectified spirits, two pints; ambergris, one scruple.

* ℞ Myrrhæ ℥i. solve terendo in mortario cum
 Aq. Alexiter. simpl. ℥vi. ss.
 Sp. Pimentæ ℥vj. dein adde
 Potass. Subcarb. ℥ss.
 Ferri Sulphatis grs. xij.
 Syrup ℥ij.

M. ft. mistura, in haustus quatuor distribuenda, quorum unam capiat mane hora quinta, post meridiem, et hora decubitus.

Griffith on Consumption.

SECTION XVII.

Of Mineral Tonics.

FERRUM.

In the history of mineral tonics, I shall bring into view, in the first place, some of the preparations of iron. They are, perhaps, entitled to this precedence on account of their superior utility and extensive employment.

As a remedy, iron was early introduced into the practice of physic. It seems indeed to have been known even to the primitive cultivators of our science, and has always been regarded as one of the metallic substances friendly to the animal system. This opinion has proceeded not less from the comparative mildness of the effects of iron, than from its constituting, as was supposed, an element of the blood, and of certain parts of the solids. It has hence, also, been very generally classed among the medicines presumed to operate, by entering the circulation. Even conceding the fact of its passing unchanged the digestive and assimilative processes, it would afford no sort of support to this ancient hypothesis. Being an

ingredient in animal composition, it is reasonable to suppose, that it would, of course, be admitted into blood vessels to a certain extent. But probable as this appears, the contrary has nevertheless been shown. Numerous and well contrived experiments originally made by Dr. Edward Wright, and repeated by Dr. Hodge, a distinguished graduate of this university, under every circumstance of care and attention, demonstrate that none of the preparations of this metal can be detected even in the chyle. It is, however, contended, that under the use of chalybeates, the blood becomes more florid, and, as this quality is thought to depend in part on the iron it holds, it is deemed pretty strong presumptive evidence of the metal being absorbed. No doubt such an effect is produced, and so it is, by any medicine or course of life, which invigorates the system, and infuses the glow of health. The blood of every animal which has been examined, is found to possess iron, however various its food or habitudes—and as, in many instances, the metal could not possibly have been taken in, it is obvious, that it must be generated by the natural processes in the same manner as many other things are elaborated.*

* Amidst the contradiction and uncertainty which exist on this point, it would seem to be the best established opinion, at present, that iron in no one shape can be detected in the blood. By the calcination, however of this fluid, it is then developed, though in what precise state still remains doubtful. Experiments made by feeding animals on vegetables containing not a particle of iron, the blood of which, however,

In its operation, iron evinces all the effects of a powerful and permanent tonic, no medicine, perhaps, leaving behind it such lasting impressions. It increases the activity and volume of the pulse, corrects the state of the blood and secretions, and invigorates the whole system. The indications, therefore, it is calculated to fulfil, are numerous and important, most of which, however, are embraced within the sphere of chronic debility. In treating of other substances, with which it is customary to combine the martial preparations, I have anticipated, in a great measure, the application of the latter to the cure of diseases. This is more particularly so as regards some of the cases of the class of neuroses, as hysteria, hypochondriasis, and its concomitant affections, as well as chlorosis, amenorrhœa, dyspepsia, &c. But I am now to add, that it has, within a short time, been very successfully employed in tic douloureux, by Mr. Hutchinson, a distinguished English surgeon.

With little or no preliminary treatment, it appears, that he enters on the use of the carbonate of iron, in the dose of from half a drachm to a drachm, or more, two or three times a day, and which, to be effectual, requires to be continued for weeks or months. Of this practice I know nothing, except from some slight notices of it in the late Medical Journals, which represent it as having the highest claims to attention.

on calcination, displayed the usual portion of the metal, fully warrant the above hypothesis of the article being created.

Diseases of a different order are advantageously treated by iron. Thus, in hæmorrhage, under the idea of its being actively astringent, it has been celebrated from the earliest antiquity. There is, however, no evidence of its having this property in any great degree, nor is the assumption of it necessary to the explanation of its effects. To atonic hæmorrhage it is of course only suited, and more particularly when associated with a cachectic condition. I have used it with utility under such circumstances, in uterine hæmorrhage, in hæmoptysis, and epistaxis.

In menorrhagia,* from laxity of system, it is also beneficially prescribed. It may appear somewhat surprising, that the same remedy should be applicable to two such opposite cases, as the suppression and inordinate flow of the menses. But the apparent paradox is readily reconciled, as each of these complaints has its origin in conditions equally to be removed by the tonic power of the article. The chalybeates are thought to restrain other discharges. That they sometimes do so in leucorrhœa seems to be admitted, and probably likewise in gleet. Nor were we once without confidence in them in the bowel affections, as dysentery, diarrhœa, &c. Whether they really possess any powers in the latter cases, I cannot pretend to determine. It is now quite common to prescribe the sulphate of iron, variously combined, in

* I adhere to the distinction which I formerly made between menorrhagia and uterine hæmorrhage, the former being an increase of the menstrual flux.

them, and, perhaps, still more in cholera infantum.* It, of course, is only suited to the more advanced period of these complaints, after the bowels are well evacuated, and the symptoms of irritation have subsided. Though my own experience will not enable me to say a great deal in favour of this combination, it has been so highly extolled, that I can hardly doubt its claims to our attention.

Much reliance is placed on the efficacy of chalybeates in the cachectic diseases. Combined with bark, I have already intimated, that, in scrofula, rickets, dropsy, and even in pulmonary consumption, they may be so managed, as to prove serviceable. Nor, perhaps, was it unknown, that, in obstinate ulcers of a feeble or phagedenic character, from whatever cause proceeding, they were adapted. Of late, however, the practice has been applied with greater precision to the cure of cancer by some of the English surgeons, and especially Mr. Carmichael, who recommends the internal use to be continued for a length of time, in large and increasing doses, while the ulcer is sprinkled with the powder of the carbonate, or some of the saline preparations, or washed with the muriated tincture. Of this treatment I know little, it never having been tried by myself, nor, so far as I have heard,

* 1.—℞ Sal. mart. ℥i, Acid. sulph. ℥ss., Aq. font. ℥x., M. The dose for a child from 3 to 10 drops, and for an adult, from 20 to 30 drops three or four times a-day.

2.—Sal. mart. gr. ii., Acid. sulph. gtt. x., Sacch. alb. ℥i Aq. font. ℥i., M. The dose is a teaspoonful, for a child, to be repeated as above directed, and for an adult a table-spoonful.

by any other physician of this city to any extent. But it comes to us from sources sufficiently respectable to entitle it to attention, and, even if it fail to cure, it might palliate cancer, and, at all events, do good in less formidable ulcers.

That iron, in a pure, metallic state, has no active operation on the system, is the opinion of some, which does not appear to be well founded. The metal is soluble in the gastric liquor, as was long since proved, and, when reduced to powder, as in the state of filings, is employed with advantage.

By chemical and other processes, however, it is converted into a variety of forms, which constitute a still more important set of remedies. At different periods, the whole of these have been used, more or less, accordingly as they were estimated. But in the present reformed state of our science, so considerable a retrenchment has taken place, that not many are retained in practice. Believing, indeed, that the properties of the whole class are embraced by a few preparations, which are recommended not less from their efficacy than superior neatness and conveniency of administration, I shall omit all the rest.

FERRI SUB-CARBONAS,

VULGO

RUBIGO FERRI.

This is commonly given in powder, in the dose of from ten to sixty grains, mixed with syrup or mucilage. In cases of debilitated stomach, an aromatic may be united to it, such as the powder of ginger. It is also exhibited in the shape of pills, and sometimes as a chalybeate wine. As a stomachic and tonic, the last form answers extremely well. My mode of preparing it is as follows.*

* ℞ Rub. ferr. ℥iiss., Cort. aurant. Rad. gent. āā ℥ss., Vin. Lusitan. ℥ii. M. The vessel containing these ingredients is to be exposed to a moderate heat, for three days, and repeatedly shaken during this time. This is a superior preparation, I think, to the chalybeate wine, made agreeably to the direction of the dispensatories.

FERRI SULPHAS,

VULGO

SAL MARTIS.

The green vitriol, or copperas, is a second preparation of much value. Its tonic power is considerable. Yet I do not know that, in any respect, it is to be preferred to the carbonate, except, that the dose being smaller, it can be given more conveniently. It is directed in pills, in the dose of from two to five grains, either alone, or in conjunction with bark, asafœtida, aloes, &c.*†‡

* *Eaton's Styptic*.—Calcined green vitriol ℥ss.—proof spirits tinged yellow with oak bark, lbi.

† *Aromatic Lozenges of steel*.—These consist of sulphate of iron, with a small proportion of the tincture of *cantharides*.

‡ *Incompatible substances*.—Every salt whose base forms an insoluble compound with sulphuric acid, the earths, the alkalies, and their carbonates—borate of soda—nitrate of potash—muriate of ammonia—nitrate of potash and soda—acetate of ammonia—nitrate of silver—of lead—and soaps.

PHOSPHAS FERRI.

The phosphate of iron has lately been introduced as a remedy. There are two preparations of it, the blue and the yellow, of which the former is the more active, and is chiefly used. Though strongly recommended in dyspepsia, amenorrhœa, chronic rheumatism, and cutaneous eruptions, I am not aware, that it has any claims to superiority. My only motive, indeed, for noticing it, is, that it is the preparation in which Mr. Carmichael much confides, in scrofulous and cancerous ulcerations. The dose of the blue phosphate is from ten to twenty grains.

TINCTURA FERRI MURIATIS.

In point of activity, the muriate of iron exceeds most of the martial preparations. It is now employed only in tincture, in the dose of from fifteen to thirty or forty drops. But in cases of great irritability of the stomach, even the smallest quantity mentioned, cannot be taken without exciting nausea or vomiting, and hence it is not a favourite medicine with practitioners. It is, however, sometimes prescribed in dyspepsia, and is used in certain cases of suppression of urine from spasm.

FERRI PRUSSIAS.

Of this preparation I know little. It has been particularly extolled by several practitioners of this country, and particularly by Dr. Zollichoffer, in intermittent fever, exhibited as well in the paroxysm as the apyrexia, in the dose of five grains, three or four times in the twenty-four hours. In uterine hæmorrhage, it has also acquired considerable reputation, and I have understood from Dr. Worthington, a very eminent practitioner of the city of Washington, that he has found it highly useful both in restraining the bleeding and doing away the pain and irritation, by which it is kept up, or renewed. He, however, recommends it in the dose of a scruple.

CUPRUM.

Copper is not, like other metals, insipid and inodorous. It has, on the contrary, an unpleasant styptic taste, and, when rubbed, emits a perceptible smell. Notwithstanding these sensible qualities, it has been held to be altogether inert, in its metallic state, except as a mechanical irritant, which is not true. When a piece of it is swallowed, it is sometimes acted upon by an acid of the stomach, converting it into a soluble salt, and a train of morbid effects is pro-

duced, among which not the least conspicuous is a copious salivation.* As a medicine, however, it is never employed in the native state. To convert it to such uses, it is subjected to certain chemical processes, by which several preparations are formed.

CUPRI SULPHAS,

OLIM

VITRIOLUM CÆRULEUM.

Of this article I have already in part treated, under the head of emetics and escharotics. But it is applicable to some other purposes, which I am now to notice, and of these, perhaps the most important, is to the cure of intermittents. It has been used in these cases more particularly by Dr. James Adair, and Dr. Donald Monro, the latter of whom adopted the annexed formula.† On his authority, I have prescribed the medicine in protracted intermittents, and with

* The late professor Barton was accustomed to relate the case of a child, who, having swallowed a cent, continued for some time to discharge daily several pints of saliva. Yet, in other instances, copper money has been retained in the stomach for many months, without any effect. To this point several facts are recorded by Dr. Paris in his Pharmacologia.

† ℞ Vitriolum cæruleum gr. iv. Extr. cort. peruv. gr. xxxii. Syrup q. s. m. div. in pil. xvi. One of these pills he gave four times a day, and continued them for two weeks.

such advantage that I am disposed to rate it very highly. To quartan agues it is especially adapted, so much so, indeed, that I know not a remedy entitled to greater confidence. My mode is to commence with a fourth of a grain at a dose, united to a small portion of opium, to be repeated three or four times a day, gradually increasing the quantity.

From its great power in this case, I suspect that it is deserving of more attention than it has hitherto received in diseases of periodical recurrence. It would, at least, be well to try it fairly in epilepsy, and the more so, as Cullen found it beneficial in hysteria.

By Boerhaave, particularly, it was much used in dropsy, and he seems to have confided much in it. But there are few traces of this practice having been imitated since his time. It is, however, a diuretic, and perhaps might be advantageously introduced into the treatment of some forms of the disease. As an injection in the second stage of gonorrhœa and gleet, a solution of blue vitriol answers better than any which I have tried. It may be made of various degrees of strength, from three to six grains to the ounce of water. This solution may also be used for divers other purposes.*†

* *Bates's aqua camphorata*, so strongly recommended by Mr. Ware.
 ℞ Cupr. Sulph. Boli Gallic. āā gr. xv.—Camph. gr. iv. Solve in aq. ferv. ℥iv.—Dilueque cum aq. frigid. lb. iv—ut fiat Collyrium.

† Vid. Escharotics.

CUPRUM AMMONIATUM.

The cases to which the ammoniated copper is considered chiefly applicable, are some of the class of neuroses, as hysteria, chorea, and epilepsy. In the latter disease, it has no doubt often done good. Cullen declares, that in many instances it has cured epilepsy, though in others it did not succeed. As strong testimony might be collected in its favour from other respectable authorities. An Italian writer,* states that he hardly ever failed in epilepsy with it, provided it was of the idiopathic species, and the system of the patient a *good deal exhausted*. The latter part of this statement contains an important practical observation. This article is stimulating, and hence requires, for the attainment of its beneficial effects, a previous reduction of action. This is a rule, indeed, which I have endeavoured to enforce with respect to the employment of all such medicines in the nervous affections. The practice in these cases has been too destitute of principle, and on this account is distinguished by much contrariety of opinion relative to the powers of remedies, and by an opprobrious deficiency of success.

The result of a pretty extensive experience with this article is, that, though, in some instances, and

* Dr. Ballo, of Genoa.

particularly in children, it will postpone to a more distant interval the recurrence of the paroxysms, it has not, within my knowledge, accomplished one single cure of epilepsy. Yet, I wish not to discourage its use. It comes to us too strongly recommended to be hastily abandoned, and, at all events, is one of the means by which the disease may be mitigated or suspended.

To chorea it is; perhaps, not less suited, under precisely the same circumstances of the disease. We have the assertion of Walker,* that he cured a number of cases of it, attended with *debility* and *relaxation*.

In pertussis I have lately found it useful, and perhaps it may prove so in other spasmodic coughs, as well as in asthma. Lately it has been highly commended by Brera in intermittent fever, associated with a general loss of strength, and particularly of the primæ viæ.

Externally, a solution of it is used as a wash in ill-conditioned ulcers, and has been proposed as an application for the removal of opacity of the cornea.

In the exhibition of this preparation, it is prudent to commence with doses not exceeding a grain, though they may soon be considerably augmented. Cullen advises to intermit it after a month, lest the introduction of a large quantity into the system might, like lead, induce deleterious consequences. But I suspect there is no cause of solicitude on this subject.

* Treatise on Nervous Diseases.

I have continued it for a much longer time, without the slightest mischief. Ballo, whom I have cited, gave in one case sixteen drachms in the whole, and Russel, in another, nine grains three times a day for many weeks, and, so far from doing harm, completely cured their patients.

ZINCUM.

In its metallic state, zinc exerts no very sensible action on the system. By chemical processes, however, several active preparations are produced, the first of which is the oxid.

ZINCI OXYDUM,

VULGO

FLORES ZINCI.

The oxyd of zinc is used very generally in this city, and I have the most satisfactory evidence of its having done good in epilepsy, chorea, and the analogous affections. Commonly, however, it is prescribed in too small a dose to be productive of the greatest advantage. It has, at least in my hands, been of little use, till the quantity was increased to fifteen or twenty grains, several times in the day. I have more than

once given a drachm of it in the twenty-four hours. The only disagreeable effect from such a quantity is nausea, which, however, is not of a distressing nature. We may safely commence with a dose of four or five grains.*

ZINCI SULPHAS,

VULGO

VITRIOLUM ALBUM.

This preparation is highly esteemed in the cases just enumerated. It would not be difficult to collect from the records of our public institutions, and the histories of private practice, as well as from other sources, much evidence of its efficacy. I have resorted to it with advantage in chorea and epilepsy, though I think it inferior to the oxid. Cullen and other European writers also commend it in the latter disease. Lettsom speaks favourably of it in hysteria.

It has been thought particularly useful in whooping-cough. I do not now mean by exciting vomiting, though in this way it is beneficial. It is exhibited in small doses, with a view to its tonic and

* Exactly this course I find to be recommended in a late English work of merit, Bedingfield's Medical Practice. As regards myself, it is, however, known to be original, having publicly taught and pursued the practice long before the appearance of that work.

antispasmodic effects. This was the practice of Saunders, who considered it as incomparably the most successful plan of managing the disease. It was also commended by the late Dr. Kuhn of this city. That in some of the forms of asthma, it might be of service, it is reasonable to presume. But I have had here no satisfactory experience with it. Concerning its employment in paroxysmal fevers, I have little to communicate. Dispersed through our medical records, some evidence exists of its efficacy. But in my trials of it in intermittents, I have been generally disappointed.

As an injection in gonorrhœa and gleet, and as a collyrium, its application is sufficiently known. In recent gonorrhœa, it may be used either alone, or united with the sacch. saturni in equal portions.* In gleet, the solution may be of double strength, or, what I think answers better, a small portion of corrosive sublimate may be added.† As a collyrium, there should not be more than one or two grains of zinc to an ounce of water, or, if it can be had, rose water.‡

* ℞ Vitriol. alb. gr. x. Gum. arab. ℥ii. Tinc. theb. ℥i. Aq. font. ℥viii.

† ℞ Vitriol. alb. gr. x. Corros. sub. gr. ii. Aq. font. ℥viii.

‡ We have a preparation, into which the sulphate of zinc enters, which has acquired considerable repute, called the vitriolic solution, made agreeably to the annexed prescription, copied out of Mosley's work on Tropical Diseases.* It is stated, that whatever he

* Take of white vitriol ℥iii., Rock alum ℥i., Cochineal gr. iii., boiling water ℔i. Mix these together in a marble mortar, until the solution is cold, and the sediment is deposited, then pour it off clear for use.

ZINCI ACETAS.

The acetate of zinc has only been employed within a few years. As an emetic, it is said to operate ac-

added to give the mixture a more agreeable taste, always detracted from its efficacy. Nor are the same ingredients so powerful, when administered, even in the same quantity, in a pill. As an emetic, this solution is exceedingly active, though it is used chiefly as a nauseant. To procure this effect, the dose for an adult is a small table-spoonful.

Not a little has been said of the importance of this medicine in some of the bowel affections.

“I have,” says Mosely, “used the solution in dysentery, with the greatest success. I give it at first without alum, in sufficient doses to cause evacuations, and afterwards with the alum, in nauseating doses, and frequently with opiates at night. This I have found far more efficacious than emetic tartar, ipecacuanha, rhubarb, or salts, as evacuants, in whatever manner combined or administered. In diarrhœa,” continues he, “of long standing, the cure must necessarily be performed by slow degrees. The treatment here is a dose every morning, to be persevered in, where the case is intractable, for weeks or months, omitting now and then for a few days.”

My knowledge of this preparation, in the preceding cases, is not intimate or extensive. I have occasionally tried it, and sometimes not entirely without effect. To the medicine, however, there is one objection, which is insuperable where delicacy of stomach exists, and this is a very usual attendant on the bowel affections. It is so nauseous, that, even if we force it down our patients, it is not retained.

Colica pictonum is another case in which the vitriolic solution is stated to be in the highest degree serviceable. After the constipation incident to the complaint is removed by purgatives, a dose of it is directed every five or six hours, while the pain continues, and, to prevent relapses, the same dose should be repeated for several successive mornings. To cleanse the foul ulcers in angina maligna, moderate vomiting by this medicine, we are told, is peculiarly well suited. But I know

tively and very promptly, in the dose of five or six grains, and seems to be adapted to all the purposes for which the sulphate is proposed.

By some of the English practitioners it has been praised as an injection in gonorrhœa, being preferable to the sulphate, as exciting less pain and irritation.

Having nearly abandoned the treatment of this complaint by injections, I have no experience with this preparation. But it is used by some of my medical friends, who corroborate all that has been reported of its efficacy. It is to be employed in the same quantity, and in like manner, as the white vitriol. The fact, indeed, is, that, in the common formula, where the white vitriol and sugar of lead are united,

nothing of its powers myself. It is also alleged to be pre-eminently useful in the disorders of the chest. Taken in small doses, says Moseley, several times in the day, it proves an excellent expectorant, and is beneficial in all pulmonic oppressions in which perspiration is performed with difficulty, and where the bronchial vessels require to be relieved, by discharges of accumulated phlegm or mucus. Nor is this all. The worst hæmorrhages of the lungs, continues he, are sometimes suspended, by the steady exhibition of nauseating doses of the medicine. Even in pulmonary consumption, that most hideous of the opprobria medicorum, it has, according to him, very advantageously displayed its powers.

To its utility, in any one of these cases, I can myself bear no evidence. But there are practitioners, and some of high respectability, within the immediate sphere of my acquaintance, who repose more confidence in the powers of the medicine than I have ventured to express. They, perhaps, have had a wider experience with it. Confiding, as I do, in the combinations of ipecacuanha or antimony, in most of the cases where the vitriolic solution might be applicable, I have hesitated to prescribe it, in preference to medicines, the efficacy of which I had habitually witnessed.

we have, from the chemical action which takes place, an acetate of zinc.

BISMUTHUM.

The only preparation of this metal which has been introduced into practice is the oxid, or, as some of the chemists state it to be, the sub-nitrate.

BISMUTHI SUB-NITRAS.

To Dr. Odier of Geneva we are indebted for this acquisition to the materia medica. It appears, that so early as the year 1786, he published a paper on the subject, in which the attention of physicians was solicited to the powers of the medicine, in several of the affections of the stomach. But prejudices arising against it, which have since been proved to be unfounded, prevented its gaining ground, as a remedy, on the continent of Europe. The first notice of its being employed in Britain, is in the Medical and Physical Journal, for July, 1799. It is mentioned by the editors of that work as a medicine either neglected or forgotten, "though," say they, "it is stated to be a powerful remedy in spasmodic pain of the stomach and bowels, particularly if it arise from organic debility, or a relaxed and emaciated constitution." To Dr. Marcet, a very distinguished practitioner in Lon-

don, the credit of reviving this article, and perhaps of establishing its reputation, is due. In a paper which he has published relative to its use, he says, "I have had frequent opportunities, in Guy's Hospital, of trying the oxid of bismuth, in spasmodic affections of the stomach, and those trials have fully confirmed the opinion which I formerly gave of its great utility." Confidence in the medicine being thus inspired, it came soon into general use, and the most ample evidence was collected in confirmation of the preceding statement of its efficacy.

Nor perhaps has less been done with it in the United States. It is very extensively employed, by the most eminent physicians of New-York, who concur in reporting very favourably of its powers, in all the affections connected with dyspepsia, as gastrodynia, cardialgia, pyrosis, and in the depraved state of the stomach incident to pregnancy. In Boston, it is also a remedy much trusted. The highly respectable editors of the New-England Medical Journal, thus express their opinion of its utility.

"The action of this substance on the stomach is that of a mild and effectual tonic, and, from our own experience of its virtues, we do not hesitate to affirm, with Odier, Marcet, Bardsley, and Moore, that in pyrosis, cardialgia, and more particularly gastrodynia, it operates more speedily, and with more certainty, than any other article of the materia medica."

I have tried this medicine in several of the gastric affections, to which it is considered most applicable,

and though sometimes with success, I confess my expectations have often been disappointed. Yet my confidence has not, on this account, ceased in the remedy. No cases are more difficult to cure than those I have noticed, and none in which the powers of medicine are so often baffled and counteracted, by the neglect of the regulations as to diet and other circumstances, the strict observance of which is indispensably required.

This is a safe and active medicine, and therefore has strong claims to our attention, independently of the weight of evidence collected in its favour. It is usual to exhibit it in the dose of five or six grains twice or thrice a day, mixed in any convenient vehicle, such as sugar or gum arabic, or it may be made into pills, which is perhaps the better mode.*

ARGENTUM.

This metal is distinguished among other circumstances by an insusceptibility to oxidation. But the acids which readily yield oxygen, act upon and dissolve it, particularly the nitric acid. The solution, when evaporated, affords the nitrate of silver; which being again dissolved and cast in moulds, forms lunar caustic.

* The oxid of Bismuth, I have learnt, has been used much in the treatment of intermittents, and with success, by Dr. Carmichael, a distinguished physician of Virginia. The same practice has of late been adopted in Europe. Vid. Phil. Med. Journal, Vol. IV.

NITRAS ARGENTI.

This is the only preparation of the metal employed internally. It appears, that even in very early times it was exhibited, and that the harshness of its operation led to its disuse. To Dr. Simms, of London, we owe its re-introduction into the materia medica, who, some years ago, was induced to apply it to the treatment of epilepsy, and, as he informs us, with great advantage, having cured several cases by it. Not long afterwards, he was followed by Drs. Cappe, Bostock, Wilson, M'Ginnis, Gough, Roget, Halford, and some other practitioners, who also boasted of their success with it in the same disease.

In this city, it has been extensively tried, both in private and public practice, as well by other physicians as myself, and our decision would not be very strongly in its favour. If it be admitted to palliate symptoms, or to protract the return of the paroxysms, this is the extent of what could be said of its effects.

It is also alleged to have been productive of service in chorea. It is particularly extolled by Dr. Powell, of London, a practitioner deservedly of high reputation. As a remedy in angina pectoris, it has been used, and a case of a complete cure by it is reported, on the authority of Dr. Cappe, of one of the provincial towns in England.

To several other complaints it is thought to be adapted. Leucorrhœa is represented as having been cured by it, dropsy sometimes benefited, and the proof is decisive of its utility in counteracting the effects, or relieving the diseases originating either from the impression of lead or mercury. It has also been used of late in intermittent fevers.

On the whole, I think this article merits attention, though the evidence of its efficacy, in many instances, is still unsatisfactory. It is given in the dose of half a grain at first, gradually increased so as to amount to ten or twelve grains a day, being previously dissolved in water, and then worked up into pills, with the crumb of bread.*†

* Perhaps we do injustice to this medicine by giving it in too small doses. By Dr. Powell, to whom I have just alluded, who is said to employ it with advantage in most of the nervous affections, from two to five grains are given every six hours. In one case of epilepsy, I gradually augmented the dose to eighteen grains in the twenty-four hours without producing any troublesome effect. Even, however, in this large quantity, it did not cure the disease.

The idle apprehension of colouring the skin by the absorption and subsequent deposition of this article, when freely exhibited, is probably one of the causes of the timid and inefficient use of it. Three cases of this kind have been recorded. Nothing can be more absurd than such a notion. Thus, other objections aside, to dye the whole surface of the body, would require a thousand times more of the preparation than was ever given to any individual. The fact is, and by which the reporters of these marvellous stories have probably been deceived, that it is by no means rare in epilepsy, for the skin to assume, from the operation of the disease itself, a livid or leaden hue.

In a paper lately published by Sementini, an Italian physician, with a view of recommending this article in epilepsy, and also in palsy from lead, more particularly, he endeavours to remove the impression against it,

AURUM.

As long ago as the time of the alchemists, this metal was supposed to be possessed of medicinal properties, and was actually employed, though soon afterwards it came to be expunged from the materia medica, as being either hurtful or inefficacious. It is again, however, brought forward, as a powerful remedy, in the management of several diseases. In a publication by Dr. Chriestien of Montpellier, which appeared some years ago, its powers are extolled with all the extravagance of enthusiasm. It appears, according to him, that gold may be employed in the state :

1. Of minute division.
2. Of oxid.
3. Of oxid in combination with ammonia.
4. Of oxid in combination with the oxid of tin.
5. Of muriate.

Numerous detailed cases are reported of the effects of each of these preparations, though they differ very

by alleging that, mixed with vegetable extract, it is not the salt, but the oxid, which is given. As an argument, however, for using the nitrate, in place of the oxid, it is remarked, that at the moment of decomposition, a combination is probably effected between the extract and the oxid, and that actually the salt is found most efficacious.

† *Incompatible substances.*—Fixed alkalies and alkaline earths—the muriatic, sulphuric, and tartaric acids, and all the salts which contain them.

much in activity, the oxides producing more speedy effects than the powdered gold, and the muriate a more powerful action than the oxides. They were all administered by friction on the tongue, cheeks, or gums. The first was prescribed "to the extent of three grains a day—the second in the dose of half a grain, gradually increased to one or two grains—the third and fourth in rather smaller quantities, and the fifth from one-tenth to one-fifteenth of a grain."

From the evidence which he has furnished, we may collect, that, within a very short time, these preparations "cure chancres, warts, secondary ulcers, sore throats, and other forms of inveterate lues—and, likewise, that they are of the greatest utility in the affections of the uterus, of the stomach, and in glandular and lymphatic complaints generally."

If it should really prove to be true, that they are endowed with such properties, they will be an invaluable acquisition to the stock of our remedies, as they are represented to effect the most radical cures of syphilis, without producing salivation, or any derangement of the functions of the body, and that no season, no temperament, and no complication of the disease, can create any obstacle to their exhibition, or detract in the slightest degree from their efficacy. But of this I am distrustful. The only evidence in support of the practice, which I have been able to collect in this country, is from Professor Mitchell, of New York, who considers the muriate of gold as quite equal

to the muriate of mercury, in all syphilitic affections, and as less inconvenient in its effects.

These aurific preparations have also been used in scrophulous, and even cancerous ulcers, as well as in the chronic cutaneous affections, with no better proof, however, of utility.

ARSENICUM.

In its metallic state, arsenic is inert. But at a high degree of temperature it is oxidated rapidly, forming a white vapour, which condenses. This product was once regarded as an oxid, though of late it is more generally believed to be an acid, and is called the arsenious acid. Whatever may be its precise nature, this is the substance which, in different states, affords our medicinal preparations.

In the course of the last thirty years, arsenic has been extensively employed in the treatment of diseases. But it is in intermittent fever that its efficacy is best ascertained, and, perhaps, most highly appreciated. That it may be advantageously used in such cases, I am not disposed to deny, though I must still say, that it is much overrated, and that whoever expects any great uniformity of success from it, will often be disappointed. Whether these failures proceed from intrinsic deficiency in the powers of the remedy, or from the very loose and indiscriminate manner in which it is prescribed, I am not prepared to decide.

Yet so much I may state, that in all the weak forms of intermittent fever, either approaching to typhus, or associated with a cachectic condition, it will prove inefficient, and most generally mischievous. This might indeed be anticipated from its acknowledged effects. The bark, as well as most other substances employed in intermittents, seems to operate by imparting tone to the stomach, and through it to the general system. But, though placed with the tonics, arsenic has no one property of this class of articles, and produces diametrically opposite effects.

In its immediate action there is more or less nausea and lassitude, and, among its remoter consequences, many of the symptoms of constitutional depravation,—such as œdematous swellings of the face and extremities, cold and pallid surface, reduced pulse, nervous tremors, with a considerable exhaustion of muscular power. It would hence appear to be wholly inapplicable to the cases of debility, and in further confirmation of this opinion, I can state, that with the patients of our Alms-House, who are nearly all of this description, either from age or intemperance, it has failed in my hands. Even when judiciously administered, and under circumstances the most propitious, it will not, generally, cure the disease. Compared with the Peruvian bark, it is very inferior, and, I think, ought rarely to be prescribed to the exclusion of that article. Cases, however, may arise, in which we shall be warranted in having recourse to it, and

especially with children, to whom it is better suited on many accounts.

Doubts have been expressed, whether the use of the article should be limited to the apyrexia, or continued during the successive stages of the paroxysm. My own impression is, that no rule need be strictly adhered to on this point. The only objection to the continuance of the medicine throughout, which I have observed, proceeds from the irritable state of the stomach, which it is apt to nauseate and distress. It is now a fact pretty well authenticated, that, in some instances, where it has failed of itself, cures may be accomplished by combining the bark with it. By some, indeed, it has been contended, that the one medicine prepares the system for the operation of the other, somewhat like a mercurial course, and that it will be found useful, in all very refractory cases of ague and fever, to precede the bark by a temporary exhibition of arsenic. Of this I have no knowledge myself, though the observation seems to me to be entitled to some respect.

As might be supposed, arsenic is used in remittent and continued fevers, where there is a tendency in the case to give way, and is probably sometimes serviceable in hectic fever. It has been recommended even in ordinary typhus, precisely under the same circumstances in which bark is prescribed. Of this practice, I have not the slightest experience, and, from the opinion which has been already expressed of the nature of this medicine, it may be presumed, that I

do not approve of it. To sustain the powers of life, seems to be one of the leading considerations, at this conjuncture of low fever, and, perhaps, it is as little calculated as any article of the materia medica to answer such a purpose. Yet it is favourably mentioned, under such circumstances, by Ferriar, whose reports generally are entitled to confidence.

During my attendance on the London hospitals, it was much used in rheumatism, and was formerly commended, by several practitioners of this city. I have seen it prescribed in the acute disease, accompanied with pain and inflammation. But surely this is an improper application of it. In chronic rheumatism of a moderate degree of action, it obviously promises more: though, even in this instance it should not generally supersede medicines, the efficacy of which is so much better established. Yet I have used it under such circumstances with advantage, and especially where the case was marked by the intermittent type.

In some of the nervous and spasmodic affections, arsenic has evinced considerable powers. It is said to have done good in epilepsy and chorea. Whether it be so, my own observations, though I have repeatedly used it, do not enable me to state positively. The remedy has the confidence of several of our practitioners, and I find it favourably noticed in the late English journals.* Exhibited freely in tetanus, in conjunc-

* In chorea particularly, it is commended by Mr. Salter, who has reported four cases of the disease, cured by it.

Vid. Trans. Med. Chirurg. Vol. X. Part I.

tion with laudanum, it has cured several cases of the disease, on the testimony of a highly respectable practitioner.*

To some of the forms of asthma it would seem also to be appropriate. I once gave it, in large doses, in a singularly intractable case of the spasmodic disease, with apparent advantage. Paroxysms, which had recurred almost every ten or fifteen days, were suspended for upwards of nine weeks. What was the final event, I do not know, as the patient left the city. In angina pectoris, it has been found useful, especially in one instance which was cured by its long and persevering employment,† and it is strongly commended by Ferriar in pertussis. To these may be added the spasmodic affections generally, though more particularly of a periodical nature, as tic douloureux, hemi-crania, cephalalgia, &c. In that species of the latter disease, called nervous, or *sick head-ache*, it often proves highly useful, when attention is paid to the regulation of the *primæ viæ*, and of diet.

By those who have insisted on the analogy between arsenic and mercury, its use is urged in glandular obstructions, as of the spleen, the liver, &c. But if ever productive of service here, of which I doubt, it is probably in cases kept up by intermittent fever. In some respects, indeed, it seems to be the counter-

* I state this fact on the authority of Dr. Taylor, a graduate of this university. The prescription consisted of ten drops of Fowler's solution, and fifty of laudanum, every third hour.

† By Dr. Cappe, of York.

agent of mercury. I have long known its utility in removing the series of affections, as nodes, cutaneous blotches, ulcers of the throat, rheumatic pains, which, though generally ascribed to a venereal taint, are undoubtedly of mercurial origin.* In real syphilis, whether primary or secondary, I believe it to be useless, and the reputation which it has acquired, especially among some of the German practitioners, in the healing of venereal ulcers especially, can only be imputed to a mistake of the cases.

Of its use in cancer, I have little or no personal experience, and, though this was among its earliest applications, the degree of its utility is not determined. As, however, this article has constituted the basis of almost all the popular remedies for cancer, it is presumable that it is possessed of some peculiar powers, in the healing of obstinate ulcers. It is administered internally, while at the same time it is applied to the sore, in the mode described under the head of escharotics.

Being one of those medicines long known to have a relation to the surface of the body, it has been employed in chronic eruptions, from leprosy down to the

* My use of the medicine in these cases, has been more extensive since the first edition of this work, and in part with a confirmation of its utility. It sometimes seems appropriate to every condition of the system from this cause. Yet I have known it to fail entirely, and even to be productive of harm, which is, probably, owing to the want of proper discrimination in the cases, a task, at all times, exceedingly difficult and embarrassing.

lowest species of herpes. With cicuta, which, I am convinced, enhances its properties, I have often prescribed it in some of these affections with great success.

These are the chief diseases in which arsenic is prescribed. It would have been easy to have swelled the catalogue to any extent. But I am incredulous as to the sanguine representations which are made from time to time, relative to its extraordinary and diversified powers.

Arsenic is prescribed in several forms, the most common, however, of which, at present, is that denominated Fowler's solution, or the liquor arsenicalis of the London college. This is the arsenite of potash, which is given in the dose of ten drops three or four times a day, gradually increased, till nausea, œdematous swellings, &c. take place.

The arseniate of potash is a second preparation, differing from the preceding among other respects in being a crystallized salt. It has the sanction of the Dublin college, and is occasionally used in the dose of a sixth or eighth of a grain. By some practitioners, the oxid, or acid, as it may be, is preferred in the solid state, made into pills. The dose is exactly the same as the preceding preparation. It was thought by Darwin, that a still better mode is a solution of the oxid in water, which he made by boiling more than a saturated solution for half an hour, letting it subside, and then filtering it through a paper, of which eight or ten drops may be taken at once.

My conviction is, that there is no great superiority in any one of these preparations. They are all sufficiently active, and may be exhibited with nearly equal convenience. The fluid preparations are, however, safest, as being susceptible of a more accurate division.

SULPHUR.

This article has been noticed under two preceding heads.* To what I have said, it remains to add, that it is so far entitled to be placed among the tonics, as evincing considerable powers in intermittent fever, and several other paroxysmal affections. In the former disease, its efficacy is well attested, where obscure and ill-defined, and particularly when attended by circumstances which exact the combined effect of a purgative and tonic. It is no less useful in hectic fever, in periodical head-ache, as well as in a variety of other affections observing the same law of recurrence. This is particularly the opinion of Dr. Physick, whom I have observed to prescribe the article with much confidence in all such cases. It is generally given, with this view, in small and repeated doses, so as moderately to affect the bowels.

* Vid. Cathartics and Diaphoretics.

SECTION XVIII.

Of Astringents.

CULLEN has defined astringents to be “such substances, as, applied to the living body, produce contraction and condensation in the soft solids, and thereby increase their density and force of cohesion.”

By consulting his reasoning on this subject, it appears, that he considers astringents as acting on the living, precisely as they do upon the dead body. The operation of this class of articles he actually illustrates by the process of tanning. But surely there is no sort of analogy in the two cases.

In tanning, the astringent liquor soaks through every part of the skin, and a chemical action takes place between it and the animal fibre. By this union the hide is rendered more dense and firm, putrefaction prevented, and we have fabricated what is termed leather. But let the same astringent be applied to the living body, and no such changes take place. As I have repeatedly insisted, so long as vitality endures,

every chemical action or combination is repelled, by powers and resources peculiar to the animated condition.

Nevertheless, there would seem, at the first view, to be a class of articles endowed with the property of corrugating or contracting the living fibre. This is especially evinced by the sensation which they impress on the tongue and fauces, and perhaps still more conspicuously by their efficacy in restraining hæmorrhages from bleeding wounds. Yet how astringents operate has never been very intelligibly explained. By Darwin their effects are ascribed altogether to the power of promoting absorption. Whether they have such a property is exceedingly doubtful—and even if it be conceded to them, it will not in the slightest degree account for their suppression of hæmorrhages.

Little, perhaps, is the evidence, after all, of the existence of any corrugant or astringent article in its general impression on the system. The weight of the two facts just mentioned, in supporting the hypothesis, is very much impaired by the recollection that we have many articles, such as opium, ipecacuanha, the cretaceous preparations, &c. which are productive of nearly similar effects, without exhibiting any sensible qualities of the kind.

The property termed astringency is very widely diffused among plants, the number being almost infinite which possess it in a greater or less degree. But it has long been a matter of controversy in what it con-

sists, and is still scarcely determined with absolute precision.

As a peculiar acid can be traced in all the more active astringents, termed gallic, from its abounding most in galls, it was for a time generally ascribed to this acid. In the progress, however, of more accurate inquiries into the subject, it was ascertained that this could not be the case, since, other objections apart, the acid itself, in a separate state, has no such property. Aware of this difficulty, the late professor Woodhouse, who investigated this point with his usual industry, was led to the conclusion, that the acid exists here combined with alum, forming a gallate of alumine. But this has been proved to be not less erroneous. The later researches of Seguin have brought into view another principle of vegetable composition, which, as giving astringents the property of tanning, is denominated tannin. That this is the principle of astringency seems to rest on pretty solid grounds, and is now generally admitted. Tannin is styptic in taste, has the power of corrugation, and is universally met with in vegetable astringents, circumstances which strongly support the hypothesis.* Whatever the principle may be on which they operate, the collection of remedies denominated astringents are thought capable of meeting a variety of indications—and hence employed in no small number

* Mr. Hatchet has shown that tannin may be artificially produced by the action of nitric acid upon various vegetable substances.

of diseases. It is, however, in checking or more permanently curing discharges, whether of blood or other fluids, that their powers are most signally displayed, and their superior utility fully recognized.

In recurring to the use of these, in common with every description of tonics, or stimulants, we should, however, be careful not to be led astray by the illusive symptoms of debility. Most of the cases to which they are considered as fitted, though apparently dependant on relaxation and weakness, are really associated with sub-acute or chronic inflammation, or visceral irritation, and are better managed, at least as preliminary measures, by general and local bleeding, the first sparingly, though frequently repeated, moderate purging, blisters occasionally renewed, an abstemious diet, and finally by the alterative use of mercury. These remarks apply particularly to the profluvia, or bowel affections.

Debility is not a disease of itself, remediable by mere tonic impressions. As the effect of functional or organic derangement, let this be removed, and the recuperative energies of the system will soon, under a proper regimen, renovate strength and restore the healthy condition.

QUERCUS ROBUR.

The bark of the English oak is calculated to fulfil some of the indications for which astringents are pre-

scribed. In the dose of half a drachm, every two or three hours, it is said by Cullen, and other writers, to suspend, with tolerable certainty, the paroxysms of intermittent fever. It has also been found useful in hæmorrhage of feeble action, in diarrhœa, and in the last stages of dysentery. But as a gargle in sore throat, an injection in leucorrhœa, or as a wash in hæmorrhoidal tumours, or in prolapsus of the anus or uterus, from relaxation, it is much more employed.*

QUERCUS CERRIS.

Galls are tubercular productions caused by the bark, or leaves of the oak, being pierced by an insect of the genus cynips, resembling the common gnat. The sap or juice escaping through this puncture is

* Several species of our native oak do not appear to be at all inferior to the foreign, and are resorted to under similar circumstances. Of these, the white oak most nearly resembles the English in its properties. The bark of the Spanish oak, however, is more generally used, and has acquired considerable reputation in the cure of ague and fever—in gangrene, and a variety of other cases. But by some practitioners the bark of the chesnut oak is preferred. It seems to be admitted that the bark of the black oak is less valuable than any of the rest, and is apt, from the greater quantity of extractive matter which it contains, to gripe, and even to run off copiously by the bowels. As internal medicines, I have not the slightest experience with the bark of any one species of the American oaks. But I have no doubt of their possessing powers sufficiently active to entitle them to attention, though, at the same time, I repose no confidence in those representations which would place them on a footing with the Peruvian bark.

inspissated, and gradually hardens into these knotty substances. Being mere excrescences, they have all the qualities of the tree from which they are formed. The most active are the product of the eastern section of Europe, imported from Aleppo. But those of our own country are not deficient in power.

As possessed in an eminent degree of the principle of astringency, galls are used in many cases. They are thought, however, more particularly adapted to chronic diarrhœa, produced, or kept up, by debility, or to restrain the colliquative purgings incident to the last stages of pulmonary and other affections. They are commonly given in powder, or simple infusion, in the dose of half an ounce of the latter, or of ten or twenty grains of the former preparation. But their effect is improved, by adding to the infusion the prepared chalk, with laudanum.*

Externally, they are used as an ointment in hæmorrhoidal tumours, and with great success, where inflammation is previously reduced. To be of much service, however, the ointment should be made considerably stronger than is usually done. I generally direct three parts of lard, and two of finely powdered galls. When the tumours are seated so far up the rectum, as to prevent the application of the ointment, an infusion of galls may be injected several times a day, and in prolapsus of the uterus, or rectum, it

* ℞ Gall. infus. ℥iv. Cret. prep. ℥ii. Tinct. theb. gr. xl. M. The dose is a table spoonful.

will prove beneficial as a wash. Nor is less said of its utility in gonorrhœa, gleet, and leucorrhœa—or as a gargle in relaxed states of the throat. By Swediaur, who is among the most experienced practitioners of Europe, in the two former complaints, it is highly extolled as an injection.*

KINO.

The substance distinguished by this name was introduced about half a century ago into the materia medica, as a powerful astringent, little being known with regard to its origin, except that it came from Africa, and was, most probably, the exudation of some plant. Even at the present moment this point is not satisfactorily determined. It is stated by the Edinburgh college to be the product of a tree of New Holland, the eucalyptus resinifera, whereas the Dublin college ascribe it, on the authority of Roxburgh, to the butea frondosa. It is said by Duncan to be afforded by the cocoloba uvifera. The prevailing opinion seems to be, that, whatever may have been the source of the primitive kino, that which is now generally found in the shops is made from various

* *Incompatible substances.*—Metallic salts, especially those of iron, produce precipitates—also acetate and sub-acetate of lead—tartarized antimony—sulphate of copper—sulphate of zinc—nitrate of silver—nitrate of mercury—oxymuriate of mercury—the mineral acids—the carbonates of all the alkalies, lime water.

vegetable substances. It is, however, occasionally to be met with in a state of purity, and, then, has a very different appearance from the factitious preparation. That which is genuine comes in much larger masses, is intermixed with the bark and fibres of the plant, is of a less brittle texture, and, united to its astringency, has a maukish sweetish flavour—while the fabricated species looks like a common resinous extract, purified and dried, is of a smoother and much darker surface, and has a taste blended of astringency and bitterness.*

One of those who most early employed this medicine was Dr. John Fothergill. He alleges that he gave it with such success in intermittents, as to effect cures in cases which resisted the Peruvian bark. In the practice of this city, kino is sometimes prescribed. By itself, I have no idea that it is competent to contend against this disease. But in conjunction with some of the more active bitters and opium, it does occasionally evince some powers.† It was also prescribed by Fothergill in menorrhagia, and has since acquired reputation in atonic hæmorrhage generally.

Of late, it is favourably mentioned in diabetes, and in several of the affections of the stomach, particularly in pyrosis. In the latter case, it is recommended in strong terms by Pemberton, in his excellent treatise

* There are three kinds of kino found in the shops, designated by the titles of African, Botany Bay, and Jamaica kino, the best of which is the last.

† ℞ G. kino ℥ii. Rad. gent. ℥ss. Gum. opii. gr. ii. M. div. in pulv. xii. One to be taken every two hours during the interval of the paroxysms.

on the diseases of the viscera.* It is, I suspect, by restoring the stomach to a sounder condition, that kino proves beneficial in diabetes, gastric disorder in some degree being always associated with that disease.

The most common application, however, of this medicine, at present, is to diarrhœa, and certain states of dysentery. To restrain purging, under most circumstances, I scarcely know an article more decidedly serviceable. Many practitioners prefer giving it in watery solution, but it succeeds better in tincture, with prepared chalk and laudanum.† As an injection in gonorrhœa, it is directed by Mr. Bell,‡ of which I cannot speak from any experience of my own, though I presume, that it might be better adapted to gleet.

It is somewhat curious, and deserves to be recollected, that kino, combined with colomba, constitutes a certain and powerful purgative. I do not know that this fact, which I have observed too frequently to doubt its correctness, has been before noticed. It is one of the anomalies produced by the combinations medicines.§

* ℞ Gum. kino gr. x. Gum. opii. gr. i. Mucil. g. arab. q. s. ft. pil. ii. Of which, take one every four hours.

† ℞ Tinct. kino. Cret. prep. āā ℥iv. Tinct. theb. gtt. xl. Aq. font. ℥iv. M. A table-spoonful every two or three hours.

‡ ℞ Pulv. kino. ℥ii. Pulv. alum. ℥i. Mucil. g. arab. ℥i. Aq. font. ℔i. M. et collat.

§ *Incompatible substances.*—The same as galls.

MIMOSA CATECHU.

This plant, a native of Hindostan, furnishes an extract formerly called terra japonica. It is now vended by the title of catechu, and is an active astringent, containing, according to chemical analysis, more of this principle than any other substance. It is hence employed in nearly all the cases to which the preceding article is deemed applicable.

The powder, sprinkled on relaxed sores, especially of a venereal nature, such as ulcerated bubo, is highly commended by the surgical writers, and I have found it serviceable.* It is, moreover, useful in certain atonic states of the fauces and uvula, and forms, with an equal proportion of Peruvian bark, and one fourth the quantity of powdered myrrh, an excellent dentrifrice, when the gums are spongy.

Catechu may be given in substance, in the dose of ten or twenty grains, or in tincture, or watery solution. It is often combined with kino advantageously.†

* It is said by Mr. Kerr that the following ointment is exceedingly useful in ulcers, I presume of a relaxed and ill-conditioned kind. It is borrowed from the Hindoos.

℞ Pulv. Cupr. Sulph. ℥iv.
 — Catechu ℥iv.
 — Alum ℥ix.
 — Resin. alb. ℥iv.
 Ol. Oliv. q. s. ft. ung.

† *Incompatible substances.*—Its astringency is destroyed by alkaline salts; and the metallic salts, especially those of iron, produce precipitates.

HÆMATOXYLON CAMPECHIANUM.

This is a tree of South America, and also of the province of Honduras. Logwood is much used as a dye.* Nor is it deficient in medicinal virtues. In decoction, or infusion, it has proved beneficial in chronic dysentery, in diarrhœa, and above all in the declining stages of cholera infantum. It is in this latter complaint chiefly prescribed by our practitioners. The infusion is best suited to the cases of children: and a table-spoonful, repeated every two or three hours, is the proper dose. An extract of logwood, which is an officinal preparation, has been proposed as a substitute for kino.†

VISCUM.

Of the misleto, once so celebrated, I have not much to say. It is known as a parasitical plant, growing on different trees, as the oak, the apple, and more particularly the gums of our country. But,

* To the colouring matter, which has lately been analysed, the name of *hematin* is given.

† *Incompatible substances*.—Precipitates are produced by the acetate of lead—alum—the sulphates of copper and iron—tartarised antimony—and sulphuric, muriatic, nitric, and acetic acids.

whatever may be the source of its nourishment, its properties are precisely the same. It affords, therefore, an additional proof of the great power which vegetables, in common with animals, possess, of digestion and assimilation, through their absorbent apparatus.

The misleto is a pretty active astringent. It was formerly much trusted in the treatment of epilepsy, and analogous diseases. Besides, it is reputed to have proved serviceable in quartan agues. I know nothing of it myself, and am disposed to think it has been greatly overrated. Yet it is an interesting article as connected with the ancient superstition of the druids, and perhaps still more as an object of natural history.

Being very abundant in the United States, it may be worthy of trial in several diseases, and especially in nephritis, a case in which I hear it has done good. The virtues of the plant are resident chiefly in the bark, which may be given in powder, in the dose of forty or fifty grains.

GERANIUM MACULATUM.

This species of geranium, or crowfoot, or spotted cranesbill, grows in the neighbourhood of this city, and is also met with in other sections of the United States. By its sensible qualities, as well as from its effects on the system, it seems to be highly astringent,

and may become an acquisition to the stock of our remedies. As a styptic, a strong decoction has been found active, and is much used, for this purpose, in many parts of our country. It is also prescribed in internal hæmorrhages, and especially those of the alimentary canal.

To diarrhœa, and the chronic stages of dysentery, and cholera infantum, it is moreover known to be adapted. It is stated, on good authority, that some of the Indian tribes rely on this article almost exclusively in the cure of the venereal disease. But I do not know to what form of that disease they apply it. From its general properties, I should suppose that it might be useful as an injection in gonorrhœa and gleet. It appears, however, that that they use it as a beverage. Even in this way, it may be serviceable in those complaints, as they frequently submit to astringents and other general remedies. It has, moreover, it is said, done good in nephritis, and I have remarked, that articles which operate on the kidneys, extend their impressions, more or less, over the whole of the urinary and genital organs. The virtues of the plant are in the root, which, as an internal medicine, in the bowel affections especially, is commonly prepared by being boiled in milk.

PRINOS VERTICILLATUS.

The black alder is another of our indigenous astringents deserving of notice. It grows almost in every section of our country, and delights in a damp, marshy soil. The bark, as well as the berries, is astringent. The latter may be made into a tincture with wine or spirits. The bark is used either in substance or decoction. It is said to cure intermittent fever, and is also successfully administered in the incipient stages of gangrene, as a substitute for Peruvian bark. But in these cases I know nothing of its powers. The only application which I have ever made of it, has been to the cure of some of the chronic cutaneous affections, in which I have found it useful.

RUBUS PROCUMBENS

ET

RUBUS VILLOSUS.

The first of these plants is the *dew* berry, and the second the *black* berry. In popular practice both of them have long been used in the bowel affections. The knowledge of the fact induced me some years

ago to try them in these cases, and I was so pleased with the result, that I have since very extensively prescribed them.

Of the vegetable astringents, I have reason to believe they are among the most active and efficacious.

To the declining stages of dysentery, after the symptoms of active inflammation are removed, they are well suited, though I have given them, I think, with greater advantage, under nearly similar circumstances, in cholera infantum. To check the inordinate evacuations which commonly attend the protracted stages of this disease, no remedy has ever done so much in my practice. It is, moreover, useful in all excessive purgings, from whatever cause proceeding, and especially in the diarrhœa of old people, as well as when it occurs at the close of diseases.

My experience with this article is limited pretty much to the cases which I have mentioned. But I cannot help believing, that it will hereafter be found to be susceptible of a more diversified application, and, perhaps, under all circumstances where an agreeable bitter tonic or astringent is demanded. As an antilithic, and, indeed, as a corrective of all the depraved states of the stomach caused by debility, I am persuaded that it will display valuable powers.

Of the comparative utility of the dew and black berry, I am hardly entitled to decide very confidently. My impression, however, is, from what I have observed of their effects, that the former is the su-

perior medicine. Certain it is, that it is more pleasant to the taste.

Every part of the plant is actively astringent, as the root, the leaves, the bark, the fruit, and all may be employed. But the root is to be preferred. The mode in which I have used it is in decoction, taking about an ounce bruised, to a pint of water. Thus prepared, we have a beautiful claret-coloured liquor, having its bitterness, which is not very great, tempered by a pleasant aromatic flavour.

OROBANCHE VIRGINIANA.

This is a small, parasitic, indigenious plant, known by the vulgar title of *beech-drop*, of which the root is considerably astringent. What is its value, as an internal remedy, in diarrhœa, dysentery, and hæmorrhages, in which it is used in domestic practice in some parts of our country, I have not accurately ascertained.

Its applications externally are better known. The cancer powder, of Martin, once so much confided in, was mainly composed of this article, and though in this case its reputation is now gone, a simple decoction of the root is still employed by some practitioners in obstinate ulcers, as well as in apthous and chronic cutaneous affections.

It would be easy very much to enlarge the catalogue of indigenous astringents, our forests and fields being redundant with articles of this description. But their properties have been imperfectly examined, and I know nothing of the practical applications of them myself.

SECTION XIX.

*Of Mineral Astringents.*

PLUMBUM.

THE preparations of lead are various. But I shall confine my observations to that only which is produced by a combination with the acetic acid.

PLUMBI SUPERACETAS,

OLIM

SACCHARUM SATURNI.

This preparation of lead was originally employed by Paracelsus, to whom we are indebted for many of our heroic medicines. As an internal remedy, it seems to have been continued by some more cautious practitioners for a considerable period afterwards. Its use,

however, was denounced by Boerhaave, Stahl, and Hoffman, and such was the deference to their authority, that it ceased to be employed. But, in the progress of time, it regained its reputation, and, with some occasional protestations against it, came ultimately to be considered, under a careful administration, as an important acquisition to the *materia medica*.

Among other cases it is applied to the cure of intermittent fever, and we are not without some authority in its favour. Distinct from other facts, we are told, that during the late war it was resorted to with much advantage by some of the physicians of our army. It is, indeed, stated, that in many instances it proved superior even to arsenic or Peruvian bark. But these accounts, I suspect, are exaggerated, and should be received with some doubt and hesitation. My experience with the lead in intermittent fever is not great, though I have tried it sufficiently to convince me, that if ever it does good, it is rarely, and should be placed among the more precarious of our remedies.

Its character is better established in hectic fever. Many of our best practitioners confide in it, and I have heard, that, by Dr. Irving, of Charleston, who is among the highest medical authorities of our country, it is particularly commended. The practice, indeed, is not new, so far, at least, as regards pulmonary consumption. It is strongly recommended by Paracelsus in all the thoracic affections, and more precisely pointed out by Etmuller in genuine phthisis.

That lead was commonly used in such cases, is further and conclusively shown, by the older dispensatories containing a formula into which it mainly enters, bearing the significant title of *Tinctura anti-phthisica*.* The later German writers abound with attestations in its favour. By Dr. Irving it has also been employed with success, in yellow-fever, as well to meet the general or leading indication in the second stage of that fell disease, as particularly to allay the gastric distress incident to it.

That the practice was comparatively successful, sufficiently appears from the evidence he has adduced. In the few trials made with it in this city, during the last occurrence of the fever, we were all satisfied of the vast power of the lead, in controlling irritability of the stomach—and I have since, acting on this intelligence, used it, with the most unequivocal advantage, to check bilious vomitings, in the different forms of cholera and autumnal fever.

The treatment of internal hæmorrhages by lead, was once common in Europe, and is noticed by one or two of the early writers of this country. But, in consequence of the clamour raised by Sir G. Baker, and other distinguished men in England, against it, a sort of panic terror seized upon physicians, and it was ge-

* ℞ Sacch. Saturn. ʒij.

Sal. Martis ʒi.

Infus. Sp. Vin. ℥i.

Of which twenty or forty drops is the dose. Vid. Salmon's Dispensatory.

nerally abandoned. To the late professor Barton, the credit is undoubtedly due of dissipating these idle alarms, and for having fully re-established confidence in the safety and efficacy of the practice, at least among us. In every species of hæmorrhage, whether active or passive, and from whatever part of the body proceeding, the lead has been found useful, according to the reports of different practitioners. Nothing, however, is more certain, than that its use ought always to be preceded by copious venesection, where fulness and activity of pulse exist. This precept applies with peculiar force to the case of hæmoptysis. Unless venesection be practised, the lead will certainly prove inefficient, and sometimes even mischievous. Nor will a single bleeding always suffice. The rule, under such circumstances, is to deplete so long as there is increased vigour in the circulation.

Lead, however, is more celebrated in uterine than in any other hæmorrhage. To be advantageously prescribed, the cases must here too be properly discriminated. The hæmorrhages of the gravid uterus may precede or follow delivery, though, in either event, if the flow be copious, this medicine will prove wholly inadequate to the emergency, as, such is the magnitude of the vessels, in this state of the organ, that its bleedings can only be checked by compression, through its own contractions.

Often, in the course of a very few minutes, were these floodings not arrested, death must be the consequence. On the treatment of them in detail, it

would be improper for me to enter. I shall indeed merely remark, that if they come on, in an alarming manner, prior to delivery, the child and secundines are as promptly as possible to be removed—or at least the membranes ruptured, which, however, is a more doubtful practice—and then cold applications applied over the whole abdomen, with a complete plugging up of the vagina. The lead, under such circumstances, I repeat, would be altogether unavailing. This medicine is applicable only to the moderate degree of hæmorrhage, which sometimes precedes miscarriage, or is incident occasionally to regular parturition, from partial detachment of the placenta.

But to hæmorrhages which take place in the unimpregnated state of the uterus, it is still better adapted. These it hardly ever fails of relieving, when judiciously administered. By Heberden, it is said, that if “ever there was a remedy which deserves to be considered as a specific in any disease, it is surely the *saccharum saturni* in uterine hæmorrhage.” My experience will not allow me to go quite so far in praise of it, though I am prepared to concur in a very high eulogium on its powers, and to the same purport might the authority of many distinguished writers be cited.*

To the complaints of the alimentary canal, acute

* I have understood from Dr. Dewees, that he has found, under such circumstances, much advantage from injections of the solution of sugar of lead up the rectum, much more so than into the vagina.

as well as chronic, lead has been considered by some as well suited. As a tonic or astringent, it is said to be serviceable in dyspepsia, and particularly in pyrosis. Whether it be so, I am unable to state. Exhibited with the same view, it is represented as productive of greater advantage in dysentery, cholera infantum, and diarrhœa, in each of which cases, it is now often prescribed in this city, and in other parts of the United States. It would indeed be no difficult task to collect very respectable testimony to its decisive efficacy, as well from our own as foreign sources—and the practice is older than we have generally supposed. It is mentioned by Etmuller, and some later writers, among whom are Adair, Jackson, and Bamfield, though not exactly under the same circumstances in which we prescribe it.

I have for several years occasionally employed it, both in cholera infantum and dysentery, not, however, to the same extent or with such success as recently. These diseases prevailed in this city in a very unusual degree, during the last and preceding summers, which afforded me ample opportunities of testing the powers of the medicine. Evacuations having been premised, by venesection and purging, I have found nothing more effectually to relieve tormina and tenesmus, to correct the morbid secretions of the intestinal canal, to allay febrile excitement, or to conduce to the comfort and general improvement in the condition of the patient. These remarks apply more especially to dysentery, though in cases of cholera infantum, ap-

proaching the same character, I have derived nearly equal advantage from it.

In some instances, where it was desirable to act on the surface, I have added a small portion of ipecacuanha, with utility, it meeting well this particular indication, without at all impairing the specific properties of the lead. In the progress of some protracted cases, it will be necessary, about once in the twenty-four hours, to intermit this course of treatment, in order to interpose some purgative, to remove any foul accumulations which may take place in the bowels. It may be inferred, from what has been said, that the same practice might be advantageously extended to diarrhœa, and such I have found it.

As part of the treatment of some of the cases of neuroses, this medicine has acquired no inconsiderable reputation. During the last twenty years, it was much and fairly tried in the public and private practice of this city in epilepsy, and, though in some cases of the disease occurring in children, it manifestly mitigated the paroxysms, it never, so far as I have been able to learn, effected one solitary cure. Experiments have also been made with it in chorea, as well as in hysteria, and, I am inclined to believe, with nearly the same results. To chronic affections, like epilepsy, especially, the lead does not seem to be appropriate, as they require, for their removal, the steady continuance of a course of treatment for a period longer than, perhaps, as respects this article, it is safe to pursue.

In the cure of tetanus, I am not aware that lead has been employed. Yet its applicability to this affection was suggested by Mr. Hunter—and, since arsenic, which resembles it in some respects, appears on pretty authentic evidence to have subdued the disease, it might perhaps be useful.*

By some of the late English writers it is represented as an almost infallible remedy in pertussis. When I first received this information, I employed it in several cases, without any sensible effect. Notwithstanding, therefore, what is affirmed in its favour, I cannot help placing it very low in the management of the disease. Confiding at one time, however, in these reports, I was induced from analogy to try it in asthma. But the result was not at all satisfactory. Dysphagia, dependent on spasm, is said to have been cured by it.

In union with camphor, we are told, it is serviceable in several of the forms of mania. But as this prescription is a compound one, embracing a very active ingredient, the evidence to the efficacy of the lead is too ambiguous to be trusted. Etmuller, however, pronounced it a specific in melancholia.

It was once thought also useful in some of the cachexiæ, and particularly dropsy. The practice, however, was never supported by much testimony, and probably merits no attention.

* It appears from a late French journal, that Burdach, a German physician, has actually cured tetanus by this remedy.

As an injection in gonorrhœa, a solution of *saccharum saturni*, in the proportion of one or two grains to an ounce of water, is a popular remedy. But I have found it one of the worst resources for the cure of that affection, commonly proving ineffectual, and is very apt to induce *hernia humoralis*. Diluted still more, it forms a safe collyrium in the second stage of local ophthalmia—rendered stronger, it is beneficially applied in superficial inflammations—and a saturated solution, mixed with one third of vinegar or brandy, proves among the most active of our discutients.* The saturnine poultice, made with lead water, and the crumb of bread, is a common application to phlegmonous swellings, and with the addition of laudanum affords much relief in painfully inflamed hæmorrhoidal tumours.

In the internal employment of lead, there is one prescription which I have found appropriate to most cases, consisting of about two grains of it, with a quarter of a grain of opium, made into a pill, to be repeated as often as circumstances may demand. What would be the effect of exhibiting a large dose of it at once, is not easy to determine.

It ought to accomplish much more, and certainly might be done with safety. Yet on one occasion, in

* Goulard's extract, though differing slightly from the preceding preparation in its chemical composition, being a true acetate of lead, is similar in its effects, and is employed for the same purposes externally, in a state of dilution.

hæmoptysis, I gave twenty grains of it at once without any advantage. Perhaps, as in the case of mercury, the mode of action of the article is regulated by the quantity. The former is a salivant or purgative, according to the dose, and the latter may prove astringent or otherwise, in the same way. I entertain such a suspicion from having observed, in all cases, in which lead by accident had been taken largely, it ran off by the bowels, occasioning little or no impression, except some tormina and tenesmus. Two drachms I have known to be taken at a time, through mistake. We shall, on the whole, probably hereafter ascertain, that, as with some other articles, the immediate irritation, and permanent operation of lead, are greater from a small than a large dose.*

ARGILLA.

Though, in a pure state, this earth is without activity, its combinations are very different. The one

* *Incompatible substances.*—The alkalis, alkaline earths and their carbonates—most of the acids—alum—borax—the sulphates and muriates—soaps—all sulphurets—ammoniated and tartarized iron—tartarized antimony—undistilled water.

Certain medicines, too, seem to be incompatible with lead, not from any *chemical* changes, but on account of the *counter-agency* which they exercise in their medicinal action. Of this description is mercury, as is illustrated in the effects of that article in saturnine colic, and, perhaps, also antimony. By M. Marat, the case of an apothecary is related, who was cured of colica pictonum, of an extremely violent character, by eighty grains of emetic tartar taken in eight days.

used internally is a super-sulphate of alumine and potash, which only I shall notice.

SUPER SULPHAS ALUMINÆ, ET POTASSÆ:

VULGO

ALUMEN.

Alum was known to antiquity only as an external application. Hippocrates speaks of its utility as a lotion in various sorts of ulcers, and his immediate successors held the same language. The credit of prescribing it internally is accorded to Van Helmont, in which he was soon followed by practitioners generally.

By some writers, it is regarded as a remedy in intermittent fever. Lind asserts it to be, when used with nutmeg, the most efficacious which he ever tried, except the Peruvian bark. Cullen, however, who prescribed it in the same way, says that it proved so irritating to the stomach, as not to be useful. My own experience enables me to advance no positive opinion on the subject. Yet it was recommended by Chalmers in the remittent fevers of South Carolina, and, under similar circumstances, is favourably mentioned by Adair. The latter directs it in union with canella alba and bark. By Darwin it is supposed to be better adapted to fever, connected with intestinal disorder.

To the chronic affections of the bowels, it is certainly applicable, such as protracted dysentery, diarrhoea, and especially cholera infantum. It is here usually given in solution, with laudanum, gum arabic, and sugar. Nor has it less reputation in some of the spasmodic affections of the alimentary canal. Beneficial, perhaps, in ordinary flatulent colic, it is decidedly so in colica pictonum, and particularly when induced by lead. This is strongly affirmed by Richter, and equally so by Percival and Mosely, the latter of whom, however, gave his vitriolic solution. To be useful, it requires to be exhibited in large doses.

To restrain other discharges it is also much prescribed. Combined with bark, we are told it does good in leucorrhœa and gleet. Nor is it less advantageous in diabetes. This is no new practice. It was employed by Dover, and, according to him, with distinguished success. The remedy has since been tried, and its efficacy in some degree confirmed.

Useful, however, as it may be in the preceding cases, it is still more so in hæmorrhages, to every variety of which it has been thought suited. My conviction is, that it is too indiscriminately prescribed in both the active and passive states. Being powerfully astringent, and even stimulant, it should never be resorted to without the previous reduction of vascular action and general excitement. Nor is it equally appropriate to the same species of atonic hæmorrhage. Cullen denies its utility in hæmoptysis, in which I concur with him. It is now indeed chiefly restricted to

uterine hæmorrhage, which was the original application of the medicine by Van Helmont, who acquired great fame by the cures he effected with it. No doubt, it is here serviceable, though, of late years, it has been in a considerable degree superseded by articles deemed of greater efficacy. Yet there is one form of the disease dependent on extreme laxity of the uterine vessels, in which it retains its reputation unimpaired.

The dose of alum is from five to ten grains. To prevent its exciting nausea, which it is apt to do, when so freely administered, an aromatic may be joined with it. But the neatest mode of exhibition, is that of whey,* prepared by boiling two drachms of powdered alum in a pint of milk, of which the dose is a wine-glassful.

Externally, alum is employed as the basis of gargles in ulcerated throat, in relaxation of the uvula—as an injection in gleet, and as a collyrium, in chronic inflammations of the eyes. In recent ophthalmia, relief is sometimes afforded by the alum curd.† This, which is a coagulum formed by rubbing a piece of alum in the white of an egg, is an exceedingly cooling preparation, and will sometimes reduce pain and inflammation very rapidly. It should be spread on a fold of linen, and applied over the eye.

Dissolved in water, with an equal portion of the

* Serum aluminosum.

† Albumen aluminosum.

sulphate of zinc or copper, alum constitutes one of the most effectual of our styptics.*†

BARYTES.

Of the preparations of this earth, the muriate, formerly called terra ponderosa, is the only one employed as a medicine. Not many years ago it was introduced into practice, and promised to be a considerable acquisition to the materia medica, and especially as a remedy in glandular and lymphatic affections.

We are assured by Crawford, that it has cured the most inveterate cases of scrofula, and is also beneficial in scirrhus and cancer. Of this statement, a part is confirmed by Clarke, a highly respectable writer, who says that cases of scrofula, in the negroes of the West Indies, which resisted mercury, the bark, and many other of the active remedies, very readily yielded to the muriate of barytes.

* Vid. Escharotics.

† *Incompatible substances*.—Alkalies, and alkaline salts, after neutralising the excess of acid, precipitate the alum. It is also decomposed by carbonate and muriate of ammonia, carbonate of magnesia, and tartrate of potash, by lime water, super-acetate of lead, and the salts of mercury, as well as by many vegetable and animal substances, especially *galls* and *kino*. It is on this account very injudicious to *combine alum with any vegetable astringent*.

The above is the language of Dr. Paris. But, though what he says is doubtless *chemically* true, I suspect it is contradicted by *practical* experience. The very vegetable combinations which he particularly prescribes I have employed beneficially.

Nearly the same account is given of it in scrofula by Mr. Pearson, who also speaks confidently of its utility in checking the progress of malignant venereal ulcers. By Hufeland and other German authors, it was, moreover, commended in various cutaneous eruptions, and in amenorrhœa, mania, &c. At one period, I tried this medicine freely, in most of the preceding cases, with so little success, however, that I have since been disposed altogether to abandon it. It is given in the dose of fifteen or twenty drops several times a day.

CALX.

As a lithontriptic, I have already treated of this substance, in the shape of aqua calcis, which, perhaps, is the most common mode of using it. Mixed with an equal portion of milk, and exhibited in the dose of a table spoonful, to be repeated every half hour, or even oftener in some instances, lime water is well fitted to calm irritability of the stomach, and to check vomitings. Nor is it scarcely less useful as a tonic and antacid, in dyspeptic and other vitiated states of the stomach. Besides which, it has been found serviceable as an astringent in leucorrhœa, in the last stages of dysentery, in diarrhœa, and in cholera infantum. I know not, indeed, of any remedy so well suited to the bowel affections of very young children. They are subject to purgings, pro-

duced or aggravated by acidity in the primæ viæ, which it perhaps neutralizes, and thus relieves the complaint. Being little offensive to the taste, it is easily given under all circumstances.

Externally, lime water is employed as a wash in old ulcers—and, blended with an equal part of olive oil, it forms an excellent application to recent burns or scalds, and irritable blisters.

Two other preparations of lime, the creta præparata, and oculi cancrorum, both carbonates, are much employed, chiefly as antacids, or astringents, to check diarrhœa—and, for this purpose commonly in the form of the cretaceous julep.

The muriate of lime, or what was once called fixed ammonia, is a preparation of perhaps some value. Distinct from its tonic or astringent properties, it has been very much commended, as well in Europe as this country, in venereal, scrofulous, and similar affections. My own experience does not enable me to say much of this article. I have occasionally prescribed it, though not with any very conspicuous advantage, and, I suspect, such would be the general report on the subject. The dose is from half a drachm to a drachm of the saturated solution.*

Of the phosphate of lime, I shall say no more, than merely to observe that it is no longer used—the little reputation which it once acquired, from purely

* Edinburgh Pharmacopœia.

theoretical views, in rickets and mollities ossium, being entirely lost.

ACIDUM NITRICUM,*

OLIM

AQUA FORTIS.

Of the mineral acids, the nitric is perhaps the most useful. Not many years ago, it was introduced, as a remedy, in the treatment of syphilis, and received an extensive trial. That it did good, in some instances, can hardly be doubted, from the very great weight of testimony collected in its favour. But the result of a more enlarged experience seems to be, that though it cannot be relied upon in the primary stages, it often proves highly beneficial in the secondary forms of the disease, and not less so in repairing the mischievous consequences of an undue mercurial impression.

Nitric acid is diffusible in its operation, pervading every part of the system. It is, hence, a useful remedy in a great variety of affections besides the cases mentioned. Of these, perhaps, the most striking are certain forms of hepatitis, especially where there is too much debility to justify the use of mercury, or when it has already been used ineffectually. To most

* The nitric acid used in medicine is diluted. But the foreign Pharmacopœias do not agree in their directions on this subject.

glandular diseases, it is, indeed, well adapted. Of all the remedies which I have tried, it has proved the most successful in those ill-conditioned scrofulous sores which approach to the nature of cancer. Not a few of these cases, which had previously resisted the best established modes of treatment, I have cured by the free internal use of it, aided by dressings with citrine ointment. Communications, too, of its efficacy, under similar circumstances, have been made to me by several of my correspondents.

Nitric acid is also prescribed in the complaints of the alimentary canal. I have sometimes directed it with effect in dyspepsia, and particularly when arising from sympathy with a diseased liver, or some other of the abdominal viscera. Yet in diarrhœa and dysentery, it is much more employed. It operates here as well by changing the morbid secretions of the intestines, as by its astringency. Nor is it less serviceable, perhaps, in chronic eruptions. But to attain its full effect, in these very intractable affections, it must be long and steadily continued.

Extensive experience has satisfied me, that of all the articles of the materia medica, nitric acid is the best substitute for mercury. Their mode of action may not be exactly alike, though they are serviceable in the same description of diseases. It is, therefore, a rule with me, where mercury is indicated, and cannot be used owing to certain circumstances, which often happen, I resort to the acid, and sometimes with great effect. Yet, it must be confessed, that, of late, the general

estimate of its powers is not so high as formerly, in syphilis, and the hepatic affections especially. To Dr. Scott, by whom it was originally recommended in these cases, in a very confident tone, it is due to state, that he has recently published a defence of his former reports, coupled with an explanation of the cause of the failure of the remedy in the hands of other practitioners.

It is alleged, that, while in India, whence he transmitted the accounts alluded to, the article he employed was produced from a manufactory, in which, from the very nature of the process carried on, as he has since discovered, *nitro-muriatic acid* was formed. To this *mixed acid*, therefore, he ascribes the effects he experienced from what he supposed at the time to be pure nitric acid, and now declares, that he derives, as formerly, from this compound, every advantage.

It further appears, that, with nearly equal utility, the remedy may be applied externally in the shape of a bath, either partial or general, as the case may demand, or by spunging the surface—the “acidulated water being made about as sour as vinegar, or of such strength, as to prick the skin a little after an exposure to it for twenty minutes or half an hour.”

In whatever case the acid is employed, he considers every trial as inconclusive, where “a ptyalism, some affection of the gums, or a very evident constitutional effect does not arise from it. As with mercury, the system should be kept charged with it for a longer or shorter time, according to circumstances.”

“The bath, he says, appears in a particular manner to affect the glands, and to alter their secretions—and, on this power, a great part of its value, in derangements of the liver, seems to depend. It, sometimes, very suddenly increases the secretion of bile, and this effect may be kept up for a great length of time. It increases the perspiration, often to a great extent. From this account of its effects it follows, that it is well adapted, independently of its applicability to hepatitis, to all diseases denominated *bilious*, or which, in other words, arise from deficient, superabundant, and depraved secretions of bile.” Nor is he less assured of its powers over syphilis, particularly pseudo-syphilis—in the correction of a strumous condition—in the healing of ulcers from any cause, and in the cleansing the surface from foul eruptions.

What is the precise degree of credit to be given to these statements, I am unable to determine. My experience with the remedy, though ‘pretty extensive, does not allow me to express any positive opinion in relation to all its applications. But the character of Dr. Scott is such as to shield him against any ungenerous imputation, and to claim for him a fair hearing on this subject. By some of our best practitioners it is much commended, particularly in visceral obstructions attended with diminutive fever, and the attestations from abroad are not less conclusive. Of these, one of the most authoritative, is contained in a paper by Mr. Guthrie, an eminent surgeon, from

which I select the following passage, as exhibiting the result of the use of the bath, in Chelsea-Hospital.

“I have shown,” says he, “that the acid bath has two principal effects:—one, that of promoting the secretions from the intestinal canal, even with pain, and often proving completely purgative—the other, though infinitely more uncertain, of increasing the flow of saliva, and especially if mercury has been previously used. It cannot then be denied to possess considerable power. As a remedy, though extremely uncertain in its effects, it is peculiarly applicable to those diseases in which the use of mercury and alteratives is indicated: in many cases it may and will be successful where these have failed—though it should not be relied on altogether as superseding their use. It will, on the contrary, be found more efficient on many occasions, when used as an auxiliary in combination with them. In all cases of constitutional derangement, dependent on the state of the primæ viæ—in nervous cases dependent on the same cause—in derangement of the functions of the liver—and of the chylopoietic viscera, it will be found of essential service. I do not believe the acid bath, alone, is equal to mercury in the influence it exerts on this class of diseases—though it is even in them very serviceable.”

As regards the composition of *the acid*, Mr. Scott seems to have varied his directions at different periods. We are told, in one of his publications, that it should consist of three parts of muriatic, and two of the nitric acid: in a second, of equal parts of these

acids : and in a third, of one part muriatic, and three parts nitric acid. Not less vague and unsatisfactory are his instructions, as noticed above, for the formation of the bath.

The formula generally adopted among us, requires equal portions of the two acids, of which an ounce is added to a gallon of warm water, increased or diminished according to the nature of the case, and especially the degree of delicacy of skin. Two gallons of this mixture, warmed to the temperature of about 96° of Fahr., in a deep, narrow vessel, will answer as a pediluvium, in which the feet should be continued for twenty or thirty minutes every night. The same bath may be used for a week, by warming each time, a part of the mixture in a glazed vessel, and pouring it into the rest. By sponging the surface, Mr. Scott considers the effect as the same, and that it is of no consequence whether the mixture be warm or cold. On these points, however, most of those who have tried the process, differ from him.

With whatever view nitric or the nitro-muriatic acid is used internally, not less than from one to two drachms should be taken in the twenty-four hours. We commence with small doses, gradually increasing them to this quantity. The usual prescription is to dilute a drachm of the acid in eight ounces of water, which may be sweetened with syrup, and its sharpness obtunded by mucilage.*

* Vid. Antilithics—Expectorants—Escharotics—and Epispastics.

ACIDUM MURIATICUM*.

Of the muriatic acid, I have little to say. It has been tried in all the cases in which the nitric is employed, though not generally with even equal success.

The only superiority claimed for it is in malignant sore throat, where it is used internally, and at the same time as a gargle, fifteen or twenty drops being given at stated intervals, in some bitter tea, and for the other purpose barley-water, or some such fluid, is acidulated with it. These applications of the article were originally made by Sir William Fordyce, and the practice has since been a good deal followed.

Thirty years ago, the remedy was likewise in such high repute in the treatment of *camp* fevers, that the king of Prussia, as a reward to Professor Reich, who pretended to the discovery, granted him a most liberal pension. In extreme emergencies, we are told, that the acid was exhibited in very large quantities. These reports, however, I have always considered as partaking so much of extravagance and empiricism, as to deserve little confidence.

Of late the *oxymuriatic* acid has been a good deal commended, particularly in the more obstinate chronic eruptions. What is the precise extent of its powers

* The hydro-chloric acid of some chemists.

under such circumstances, my experience does not enable me to determine very confidently. As a corrective of contagion, and, indeed, of foul conditions of air, from any cause, it is probably entitled to more attention. The practical objection to it is, that in crowded positions, as in hospitals, where it is mostly demanded, the patients are so suffocated by the vapour, as often to preclude its use: and we are compelled to recur to the fumes of nitrous acid, which are less distressing, though not so effectual. It is more suited for cleansing empty wards, or the apartments of prisons, where contagion may exist, or places annoyed by the noxious effluvia from animal or vegetable putrefaction.*†

ACIDUM SULPHURICUM.

The sulphuric acid is prescribed chiefly in the shape of *elixir vitriol*,* which is the acid, in a state of dilution, with an aromatic added. It is a very pleasant

* Chlorine may be procured for these purposes, by taking three parts of common salt, one of the black oxid of manganese, and rather less than three of strong sulphuric acid, water being previously added to the two first ingredients.

The nitrous vapour is disengaged by putting nitre to the sulphuric acid, previously warmed over a lamp.

† The *hyper-oxymuriate* of potash, at one time, had much reputation in syphilis, and in all other cases in which nitric acid was recommended. What is its value I do not know. The dose is ten grains.

† Acidum sulphuricum aromaticum.

and useful tonic, given alone, in water, in the dose of fifteen or twenty drops, every two or three hours, or with the infusion of bark, &c.

It is now commonly directed with the view of invigorating appetite, and of restoring tone to the digestive organs, or to restrain colliquative sweats. But, at one time, and that not very remote, its powers were so much more highly appreciated, that it was supposed to be serviceable even in some of the cases of neuroses, as chorea and epilepsy. No one, at present, however, would think of confiding in it in such diseases.

To hæmorrhage it is much better suited. It is here a popular remedy, and I have sometimes seen it used with very good effect in restraining moderate uterine effusions. In epistaxis and hæmoptysis, it is still more frequently prescribed. The elixir vitriol, in all these cases, was the favourite remedy of Sydenham.

In the course of the last few years, much has been alleged of the utility of the sulphuric acid itself, in the chronic eruptive complaints. Continued for a long period, it might, perhaps, prove adequate to the removal of some of these affections.

Externally, it may be applied to the same purpose. In the proportion of one drachm of acid, to an ounce of lard, an excellent unguent is formed, with which I have cured tinea capitis and psora. But a neater preparation, in the latter case, is the acid diluted, and applied as a lotion to the surface several times

a-day. With this, I have removed itch, almost as speedily as with the ordinary sulphur ointment, and it is exempt from all disagreeable properties. As an injection it is sometimes used in gonorrhœa, gleet, and leucorrhœa, and, still more diluted, as a collyrium.

THE END.

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Handwritten notes in cursive script, likely bleed-through from the reverse side of the page. The text is mostly illegible due to fading and slant but appears to contain a list of items or a recipe, possibly including 'Zinci acetas' and 'Zincum'.

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472	2	particularly	greatly.









